

MARINE RECORD

ESTABLISHED 1878.

VOL. XX. No. 37.

CLEVELAND---SEPTEMBER 16, 1897---CHICAGO.

\$2.00 Per Year. 10c. Single Copy

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To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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TRYING TO BEST US.

At a special meeting of the London Chamber of Commerce, held on Monday, Sir Louis Davis, Minister of Marine for Canada, says: "The McKinley tariff had built up a prohibitive wall against Canadian trade, and the export trade hitherto existing between Canada and the United States had therefore been transferred from the United States to Great Britain. They found that in fast Atlantic transport Canada was behind in the race, and they therefore made arrangements whereby at the end of 1898 four new large steamers would be running between Canada and Great Britain, and these ships, which were subject to the approval of the Admiralty, were, when running, bound to carry emigrants for less money than any other line that crossed the Atlantic. The Canadian Minister of Agriculture has established cold storage depots in almost every port of Canada for those products that could be satisfactorily disposed of in the mother country and the Canadian government had every hope that in the future the trade between the two countries would be indefinitely increased. They had long since realized the fact that none but first-class goods need be sent to England. Canada was prepared to supply the best of everything agricultural that could be transported by cold storage, and he believed that in the future the motto, "Made in Canada," would be the best passport to the homes of Great Britain.

LAKE TRAFFIC TO NEW YORK.

The handling of grain is the principal trade of the port at the present time, says Seaboard. Large quantities of that commodity are afloat in boats, all around the harbor, and the large tows which came down the river during the past week have been made up of principally grain boats.

The "Porgie" ground is of course a jubilant section at the present time and while the grain continues to move there will be work for all. The petroleum trade is also brisk, as during the week six or seven tank steamers arrived and sailed again. A number of sailing vessels have also been loaded during the past week with petroleum in barrels, and the usual shipment of oil in cases has been observed. With the absence of the tank steamers, their combined cargoes would have given employment to about 30,000 tons of sailing vessels, which would also entail the employment of a number of stevedores, coopers, laborers and others. A good round tax on tank steamers entering American ports to compensate for the loss to labor they make, would be about the correct idea, were it not for the Russian oil fields.

A RUSSIAN CANAL.

The Russians hope to begin work in September on the Dnieper Canal, which is to open a way for ships of war between the Baltic and the Black Seas and enable Russia to unite her fleets in case of war. As it is now she would be compelled, if opposed to force the passages of the Bosphorus and the Dardanelles, possibly give battle near Gibraltar, and force a way through the English Channel, the German Ocean, and the Scandinavian Straits.

JAPANESE NAVY.

The following are vessels which are now in hand for the Japanese Government, in addition to the Fuji, which has been completed, and the Yashima, which recently left the Tyne. The battleship Shikishma, of 15,000 tons and 14,500 horse-power, is to be completed within two years at the Thames Iron Works, and other vessels of the same class are to be built at Clydebank and the Vulcan Works at Stettin. The two cruisers of the first class, Kasagi and Chitose, 4,750 tons, are to be completed by Dec. 31, 1898, in the Cramps' yard at Philadelphia, and the Union Iron Works, San Francisco. Messrs. Thomson are to complete this year a cruiser of 4,350 tons and 15,500 horse-power at Clydebank, while two 30-knot destroyers are to be built by Messrs. Thornycroft, and four by Messrs. Yarrow. Herr Schichau will build five 24-knot boats at Elbing, and M. Normand as many at Havre. The Elswick yard will also have a considerable share of the work.

HANDLING GRAIN AT BUFFALO.

The immense receipts of grain at Buffalo for the past week is equaled only by the facility with which it has been handled so far. Although the entire fleet was practically cleaned up on Saturday night, there was 2,000,000 bushels waiting again Monday morning. But the elevators went to work, and have done wonders. Vessel after vessel has been cared for, and though the fleet was coming in all day, there is no fear of a stoppage anywhere. The elevators have shown a disposition to shift their cargoes to other houses if stuck. The Export sent elsewhere the Craig, Tokio and Parks Foster. The port has the run of five elevators and is taking care of everything in fine shape. The Erie, however, is not so well fixed, and is estimated to have 400,000 bushels waiting for it. The Lehigh houses are getting pretty well filled up. Had the old scooper system prevailed there would have been trouble, but the rule to finish a vessel at night it is ruling and the Export was at work at 1 o'clock Monday morning. All parts of the great machine have worked together well. rious wait this time; but if that fails, there will be a quick stoppage of the big river of grain moving eastward. The canal is doing what it can, but the hard times cut the fleet down so that it can hardly cope with the fall grain fleet down the lakes.

TO SPAN THE ATLANTIC.

A sea tamed, harnessed, robbed of its terrors, no longer the "trackless" sea, but marked by shining steel from Sandy Hook to Fastnet Light—lighted, policed, patrolled, ambulated until it is as safe as any street, with men watching by day and night to guide vessels, to shelter disabled craft, and telegraph for help when needed—a 3,000-mile street of the sea, with all modern safe-guards. This is what a great syndicate of French capitalists proposes. And high engineering talent has pronounced the proposition feasible.

To make a street of the sea is the joint plan of an Italian named Carvello and a Frenchman named Lemieux. Public experiments have been made by them at the mouth of the River Seine, near the ocean, which seem to demonstrate that success is possible. Sig. Carvello has invented a ship which, in this instance, is supposed to serve a novel purpose. Its framework consists entirely of steel tubes covered with steel netting, with quarter-inch meshes, which are filled in with concrete, rubbed smooth to diminish liquid friction.

As the bird flies the distance between Havre, France, and New York City is figured at 3,000 miles. A sailor in the mast of one vessel can see at a distance of fifty miles the masts of any vessel which may happen to be at that distance. Bearing in mind these facts, this enterprising syndicate proposes to construct from sixty to seventy-five ships built on the plan of Carvello, and fitted with great search-lights, and station them fifty miles apart in an almost direct line across the Atlantic. But instead of moving about from place to place each is to be supplied with eight immense cables of woven steel wire, similar to those upon which hangs Brooklyn bridge in New York, but smaller. Three of these cables will hang from each side of the vessel and the other two from front and rear, all at angles of forty-five degrees with the ship's sides, and each will be fastened by immense anchors to the nearest ocean bottom that can be discovered by sounding. There will thus be established a straight line of stationary ships directly across the ocean and at regular intervals of probably fifty miles. The idea is peculiarly French, but might eventuate.

UNITED STATES TONNAGE.

On June 30 last the merchant marine of the United States numbered 22,633 vessels, aggregating 4,769,020 tons. The tonnage on the Great Lakes was 1,410,103, an increase of 86,000 tons since June 30, 1896. The Atlantic and Gulf tonnage fell off 20,000 tons and the Pacific tonnage remained stationary.

Of the states, New York leads, with 4,857 vessels; tonnage, 1,331,743. Michigan is second, 1,132 vessels; 477,602 tons. Ohio is third with 558 vessels, but tonnage, 390,052 registered.

Another instance of American competition in the iron trade in this country came to light a few days ago at Douglas, Isle of Man, where the corporation are in want of a quantity of cast iron sewer pipes. When the tenders were opened it was found that one had been sent in by R. D. Wood & Co., of Philadelphia. The prices quoted, except in case of the bolts, were, however, considerably higher than those of English firms, as will be seen from the comparison below with those of the Stanton Iron Works Co., with whom the order was placed: R. D. Wood & Co., 15-inch diameter pipe, £7 10s per ton, 42-inch £7 10s, special pipes 10s per cwt., 1-inch diameter bolt 14s, 1½-inch 14s; Stanton Iron Works Co., 15-inch diameter pipe £5 15s per ton, 42-inch £5 12s 6d, special pipes 9s 6d per cwt., 1-inch diameter bolt 16s 6d, 1½-inch 18s.

NEWS AROUND THE LAKES.

CHICAGO.

Special Correspondence to the Marine Record.

Henry B. Burges, ship builder of Manitowoc, was in this city on Saturday.

At the Independent Tug Line's floating dry dock the tug T. T. Morford is on for bottom calking.

Capt. A. L. Fitch chartered the steamer John Owen and schooner Saveland, for corn and the steamer Whitaker, for wheat to Buffalo.

Capt. John Prindiville chartered the steamer Chas. A. Street and consorts Godfrey and Winslow, for corn to Kingston, at 3 3-8 cents; steamer Nahant, oats to Buffalo, at 1 1-2 cents.

J. A. Calbeck & Co. chartered the steamer Nicaragua and consort Paisley, for corn to Buffalo, at 2 cents; schooner George J. Boyce for oats to Sarnia, at 1 1-4 cents; steamer Normandie, for lumber, Duluth to Chicago, at \$1.75.

J. J. Rardon & Co., chartered the steamer Inter-Ocean and consort Winslow, for chipped oats to Kingston, at 2 3-4 cents; steamers Henry Chisholm and Kesper, for wheat to Buffalo, at 2 cents; the steamers City of London and Phenix, for corn to Buffalo, at 2 cents; steamer E. B. Hale, for corn to Kingston, at 3 1-4 cents.

H. W. Cook & Co. chartered the steamers Venezuela and Panther, for corn to Buffalo at 2 cents; steamers W. H. Wolf and Wm. B. Morley, for corn to Buffalo, at 1 3-4 cents; schooner H. C. Winslow for lumber, Menominee to Chicago, at \$1.12 1-2; schooners A. Mosher, City of Sheboygan and Minnie Slauson for lumber, Alpena to Chicago at \$1.25.

At Miller Bros' shipyard the tug Alert was in dock for calking all over and packing her stuffing box; the steamer Charles Rietz for repairs to stern bearing, bottom searching and calking butts; the barge Advance for a new plank on bottom and calking butts; the canal boat Polaris is receiving new stern, eight new planks on bow and new wales.

Samuel Miller, aged 81 years, died at his residence, 398 North Halsted street, on September 9. He was the brother of Thomas E. Miller, Brice A. Miller, William M. Miller and James Miller. He had been connected with Miller Brothers' shipyard in this city for 30 years, prior to which he was engaged as a canal boat builder at Oswego, N. Y., for many years. He leaves a widow and three sons. His funeral took place at Rosehill Cemetery, last Saturday.

The schooner George Sturges is laying at a dock at Clark street bridge, where she is being fitted out for an expedition to the Yukon river, Alaska. Fifty state rooms (twenty-five on each side of the schooner), to be fitted with double berths are to be built below the decks for the accommodation of the 100 passengers she expects to carry. There is also to be a diningroom and other rooms below the deck. Each passenger is to pay \$200. for which amount he will be allowed to carry on board one half a ton of baggage, and will be boarded during the trip. Two large water tanks, each to contain 4,000 gallons of water will be placed in the hold alongside the keelsons and a number of barrels for water will also be carried on deck. Capt. Adolphe Fritsche, whose fame is widespread all over the world for his seamanship and daring in crossing the Atlantic alone in the Nina, which he built in Milwaukee, will command the schooner and he will also carry two mates and eight men before the mast all of whom will be ship carpenters and sailmakers. The schooner is advertised to leave Chicago October 10.

WILLIAMS.

BUFFALO.

Special Correspondence to the Marine Record.

Messrs. H. G. Trout & Co. of this port have a universal reputation for efficient propeller wheels. The King Iron Works Foundry is about the best in the country, and its directors and managers know how to treat people white.

Marine business is picking up at this port, as it is at all lake ports. Just now the only drawback which I can find is the coal miners' strike, which affects anthracite as well as bituminous. On the other hand we are receiving all of the grain that we can take care of.

The steamer Thos. Davidson, bound in with grain, went ashore beyond Sand Catch pier, opposite the Tiff farm, during the thick weather early Wednesday morning. She ran out about a foot, but is on a sandy bottom, and is being lightered off.

PORT HURON.

Special Correspondence to the Marine Record.

C. D. Thompson is fitting out his fleet with first-class wrecking outfits, and he will have tugs stationed at Detroit, Sand Beach, Sault Ste. Marie, Amherstburg and Port Huron for the remainder of the season.

The steamer Rube Richards collided with the schooner Marcia off the water works dock at Port Huron last Saturday morning. The Richards was bound up and the Marcia bound down in tow of the steamer Matoa. When the steamer was abreast of the schooner her wheel chains parted, and she sheered into her. The Marcia

was pushed up on the bank until she was four feet out. The tugs Lee and Thompson released both boats. The Richards made repairs and got away a short time later.

FLOTSAM, JETSAM AND LAGAN.

After a good season the Northern line passenger boats have gone into winter quarters at Buffalo.

The steamer Britannic has been sold by Capt. E. G. Ashley to Capt. Amy. The price was not given.

At Buffalo the Minnesota dock handled 67,000 tons of ore in August and expects to handle 80,000 tons during September.

The Detroit & Cleveland Steam Navigation Company will continue the usual daily runs to Put-in-Bay as long as the weather remains good.

To date there have been 1,500,000 feet more lumber shipped from Bay City than for the corresponding period last year. August was the banner month, being over 13,000,000, which is nearly double the amount last year. September has started in well, the shipments for the first eight days aggregating more than 500,000 feet more than the whole month last year.

Capt. Benham and Dan McLeod held survey on the steamer Egyptian. She will be in drydock the balance of the week and repairs will cost about \$3,000. She went ashore coming down the lake with ore from Escanaba.

Repairs on the steamer Roby, which was damaged by fire at Marquette a few days ago, were finished Tuesday.

Milwaukee will require upwards of 800,000 tons of coal to equal the receipts during the season of navigation in 1896. This is equivalent to 10,000 tons per day for the remainder of the season to November 30. If the deliveries could be made regularly no difficulty would be experienced at the different yards in handling the amount, but such a thing can hardly be expected.

Capt. Reid's salvage work on the Cayuga does not seem to amount to much, although he has considerable stick to it in his operations. To do salvage work Reid should be more expeditious. His work on the Armour was long drawn out, but eventually efficient and successful, yet something more prompt is required in an up-to-date wrecker, as so-called on the lakes, for wrecker is an ambiguous term any way, as now used, especially on the lakes.

It is altogether likely the schooner George, that arrived at Toledo a few days ago had the cheapest tow from Bar Point of any vessel that has ever come into that port. There are two tug lines at Toledo. The captain of a tug of one of the lines offered to bring the Georger here for 50 cents and a box of cigars. The captain of a tug of the other line agreed to bring the Georger here and give her captain one cent and a suit of clothing. The latter offer was accepted.

When the steamer I. M. Weston was sold at Kenosha by the United States marshal recently she was bid in by the firm of Meyer & Baker for the Sandusky Steamboat and Fish company, mortgages. Owing to some misunderstanding, however, the Sandusky company declined to take possession of the steamer and she is now the property of the law firm and in the market for a purchaser. The Weston costs her present owners \$880, and it is altogether likely that she can be bought for \$1,000.

Buffalo vessel agents are saying that the shipment of hard coal from that port is more and more tied up by the propeller lines every year. At one time this was not so. From the time the Anchor line went out of coal carrying and let the Pennsylvania company's shipments go in wild boats, the tendency was for several years in that direction. Then a change came about. The Lehigh company has always carried the most of its own coal, but it now carries all that it cares to. But for the low rates this season, which makes it quite as desirable to ship in other boats, it would be carrying as much again of its own coal as it is. The Erie coal is now largely carried in the Union boats, the coal for Gladstone is controlled by the Soo line and that for Manitowoc by the Great Lakes line. By its line boats and other boats in some way attached to it by individual ownership the Lackawanna company ships much more directly than it used to. And so it goes. Though there is no appearance of any immediate increase of this tendency it has already made quite a wide difference in the business.

AN EASTERN BUILDER AT DETROIT.

Charles D. Cramp, of the famous Philadelphia ship-building firm, accompanied by George S. Emerick, also connected with the management of that institution, visited Detroit this week.

Mr. Cramp is a gentleman of medium height, dark complexion and a sociable disposition.

"I'm charged with being out here to buy something or start a plant of some kind on the lakes," said Mr. Cramp. "Nothing of the sort. I was never in Detroit before in my life, and I'm going on to Cleveland tonight. Some of our people came around this way some weeks ago. They were traveling just to see and learn. Mr. Emerick and I are taking a little trip as a vacation. We started south. Then it grew warm; we got afraid of being quarantined, and so came north. I'm not going into any business venture on the lakes. I've got all I can attend to at Philadelphia.

"We've built a lot of boats for the government; earned \$1,775,000 in speed premiums. We also have a suit against the government for \$1,500,000 for the unnecessary delay and expenses they have made us while we were building

their boats. We have the Alabama building now; sister ship to the Iowa. We have a cruiser under way for the Japanese government, the Yasagi. We are working 2,500 men; when running full we employ 7,000 men.

"We built the St. Paul and St. Louis. They hold the ocean records now. The Lucania and Campania may beat them in smooth water, but they can't stay with them in rough seas. The Lucania and Campania are too limber. All European-built vessels are too limber. They vibrate so in a sea that it isn't safe to push their engines to high speed.

"As soon as those steamers reach New York from 100 to 150 machinists go aboard to make repairs to the machinery. The men stand waiting, and jump aboard the minute the steamers land, and work every minute up to the time of leaving. There is no such work aboard the St. Louis and St. Paul. Those steamers are much stiffer built. Their machinery can be pushed safely in rough weather. They run right away from the other vessels in a gale. They have only 20,000 horse power, against 30,000 on the Lucania and Campania, and burn a third less coal. Just as soon as some man puts up the money we will build some steamers to beat those others in smooth water also.

You noticed we had offered to furnish some armor plate at \$300 a ton for the Alabama? We did that simply to gain dispatch on the contract. Armor plate can't be built at less than \$425 a ton. We lose the difference to save time."

So Mr. Cramp is quoted.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Albany.....		50,000	60,000		
Baltimore.....	1,315,000	1,430,000	442,000	87,000	
Boston.....	7,000	721,000	184,000		
Buffalo.....	464,000	1,954,000	329,000	52,000	486,000
" afloat.....					
Chicago.....	2,034,000	16,150,000	3,277,000	551,000	53,000
" afloat.....					
Cincinnati.....	5,000	4,000	46,000		2,000
Detroit.....	246,000	29,000	29,000	98,000	13,000
" afloat.....					
Duluth and Superior	980,000	181,000	106,000	462,000	165,000
" afloat.....					
Indianapolis.....	259,000	62,000	53,000	1,000	
Kansas City.....	1,556,000	299,000	113,000	10,000	
Milwaukee.....	57,000	212,000	22,000	52,000	33,000
" afloat.....					
Minneapolis.....	2,640,000	24,000	193,000	15,000	6,000
Montreal.....	199,000	51,000	387,000	19,000	21,000
New York.....	1,010,000	3,588,000	1,989,000	504,000	21,000
" afloat.....	17,000	155,000	23,000	9,000	
Oswego.....		118,000	3,000		20,000
Peoria.....		106,000	40,000		
Philadelphia.....	580,000	1,078,000	131,000		
St. Louis.....	1,603,000	414,000	228,000	141,000	
" afloat.....	71,000				
Toledo.....	587,000	593,000	831,000	222,000	
" afloat.....					
Toronto.....	21,000		5,000		1,000
On Canal.....	208,000	1,514,000	70,000	6,000	146,000
On Lakes.....	1,367,000	4,859,000	1,139,000	120,000	363,000
On Mississippi.....	40,000	21,000	1,000		
Grand Total.....	15,766,000	33,604,000	9,701,000	2,349,000	1,330,000
Corresponding Date, 1896.....	47,602,000	13,007,000	8,078,000	1,777,000	1,152,000

DEEP WATERWAYS SURVEY.

Albert Noble and eGorge Y. Wisner, deep waterways commissioners have gone to Buffalo, where they met Major Raymond, their colleague. They will proceed over the line of the proposed Niagara canal in company with C. L. Harrison, of Chicago, the engineer in charge of the field work. The distance is twenty-six miles, and it is confidently expected that the survey will be completed before winter. "If the severe weather does not set in until the middle of December," said Mr. Wisner, "I think the survey will be finished. The whole project will probably occupy two years." After about a week spent in going over the ground with Engineer Harrison the members of the commission will return to Detroit, where they will hold a meeting and oversee the opening of headquarters.

SOO RIVER RULES.

Capt. Shoemaker, of the revenue cutter service, announces the signals that will be displayed at Johnson's Point to protect vessels in passing through the "Dark Hole." Whenever a steamer bound down enters the Hole in daylight, a white flag will be hung out on the point flag-staff until she comes abreast the point. If she has a tow a red flag will be also displayed below the white flag. At night a white and a red light will be hung out for a steamer, and a second red light added for a tow. No signals will be displayed for tugs or other small vessels. The rule requiring a long blast of the whistle at Rains' buoy and also at Evers' Point remains in force.

The 100th anniversary of the launching of the U. S. S. Constellation, now attached to the training station at Newport, R. I., was celebrated there Sept. 7. The vessel was launched at Baltimore and has figured prominently in the country's history. A salute was fired at noon, and the vessel was illuminated at night, and all day long the ship was crowded with visitors. Suspended from the foreyard were the two dates in incandescent lights, "1797-1897."

OUR MERCHANT MARINE.

The documented merchant marine of the United States on June 30 last, numbered 22,633 vessels of 4,769,020 gross tons, an increase of 65,400 tons over June 30, 1896, and a decrease of 275 vessels. The tonnage of the Atlantic and gulf coasts is 2,647,796, a decrease of 20,000 tons. The tonnage of the Great Lakes is 1,410,103 tons, an increase of 86,000 tons.

Pacific Coast tonnage was virtually stationary. American sailing tonnage has exceeded steam tonnage for the last time in our history, the steam tonnage on June 30 amounting to 6,599 vessels of 2,358,558 gross tons, an increase of 51,000 tons over the previous year. Nearly all of this increase is on the Great Lakes where steam vessels number 1,775, of 977,235 tons.

New York state has the largest merchant marine—4,857 vessels of 1,331,743 gross tons, an increase of 27,000 tons. The state exempts from taxation its tonnage in foreign trade. Michigan ranks second with 1,132 vessels of 477,602 tons. Ohio's vessels are the largest and most modern, 558, of 390,052 tons. Maine's fleet numbers 1,871 vessels of 299,592 tons. Steel and iron vessels number 1,023, of 1,207,222 tons, an increase of 117,000 tons. During the year sixty-eight iron or steel vessels of 124,395 tons were built and documented. Vessels registered for foreign trade number 1,230, of 805,584 tons.

MORE PALTRY WORK.

A dispatch from Washington says; "Assistant Secretary of the Treasury Spaulding has a peculiar Michigan case on his hands just at present, that may not be decided until the courts reach a decision in a case somewhat similar, now pending. Some weeks ago the treasury department received vigorous protests from Mr. C. F. Bielman, treasurer and traffic manager of the Star-Cole, Red and White Star lines, plying their steamers between Detroit and Toledo and Detroit and Port Huron, and City of Toledo, of the line named, protesting against the action of the collector at Port Huron in levying and collecting duty on a lot of dressed poultry claimed by the boat owners to be sea-stores, for use on the City of Toledo. The chickens were purchased at Port Lamberton, on the Canadian side, and fifteen minutes later the boat arrived at Algonac, an American port, while Detroit was reached at 11 o'clock the same forenoon, and before the supplies were needed for use on the steamer, where regular meals are served. Section 3112 of the Revised Statutes reads: "If upon examination * * * such articles are not deemed excessive in quantity for the use of the vessel, until an American port may be reached by such vessel, where such sea-stores can be obtained, such articles shall be declared free of duty; but if it shall be found that the quantity or quantities of such articles * * * are excessive, it shall be lawful * * * to estimate the amount of duty on such excess * * * ." As in this case the supplies purchased in Canada were intact on the arrival of the steamer at the first American port, Algonac, not having been used while crossing the river, the officers who have so far acted on the case have maintained that the action of Collector Avery in estimating and collecting duty on the chickens was in accordance with law and regulations. As the boats make frequent landings, and are at no time more than twenty minutes from a United States port where such supplies can be purchased, the plea of the necessity of purchasing in Canada is not admitted on the part of the government, and the protests will in all probability prove of no avail in helping the steamboat company to recover its money. A test case involving these points is now in the courts."

PUT RULES ON BOARD.

"In connection with our correspondence on various subjects pertaining to aids to navigation," writes George L. McCurdy to Capt. McKay, of the Lake Carriers' Association, "I have thought of writing to you about the results of our investigation this season, for I believe that in them we have found some of the causes of disasters, and that many of these disasters could have been prevented seems to be a foregone conclusion. I cite for example the disaster to the steamer Britannic, which ran into the gates of one of the locks in the Welland Canal. I wrote to Capt. Alvin Neal, the owner, and asked him if the experience arising out of this disaster suggested to him an idea how to prevent the repetition. Mr. Neal investigated the matter and found, to his surprise, that neither the master nor the engineer of the Britannic had

a copy of the rules of the Canadian government governing navigation of the Canadian canals. Section 5 of these rules reads as follows: 'It shall be the duty of all masters or persons in charge of any steamboat or other vessels, or of any craft or barge in approaching any lock or bridge, to ascertain for themselves by careful observation whether the lock or bridge is prepared and ready to receive them or allow them to pass through, and to be careful to stop the speed of any such steamboat or other vessel, or raft with lines and not with the engine wheel.' In the case of the Britannic steam was used to stop the progress of the vessel, and we find that just because steam was used we have to pay something like \$4,000 as a result of this steamer running into the gates. Capt. Neal feels if the master had understood the rules the disaster would not have occurred. This then is one of those accidents that could have been prevented by seeing that each master is furnished with a copy of the rules, or of the sections which more directly apply to navigation in the locks."

MARINE DISASTERS FOR JULY.

The administration of the "Bureau Veritas" has just published the list of maritime disasters reported during the month of July, 1897, concerning all flags. Sailing vessels reported lost: 11 American, 1 Austrian, 15 British, 1 Chilean, 3 Danish, 2 Dutch, 9 French, 2 German, 2 Italian, 7 Norwegian, 2 Russian, 1 Spanish, 4 Swedish. Total 60. In this number are included 8 vessels reported missing. Steamers reported lost: 1 Belgian, 7 British, 2 French, 2 German, 1 Japanese, 1 Norwegian. Total, 14. Causes of losses: Sailing vessels—Stranding, 21; collision, 7; fire, 1; foundered, 10; condemned, 13; missing, 8. Total, 60: Steamers—Stranding, 9; collision 2; foundered, 1; abandoned, 1; condemned, 1. Total, 14.

EXONERATED.

First Mate Sidney O. Neff of the steamer Ira H. Owen, who had his license suspended for 90 days by Inspectors Danger and Van Liew, of Port Huron, being by them held responsible for the collision with the Susquehanna, in Thunder Bay recently, has obtained a reversal of that action by an appeal to Supervising Inspector Galway, of the Detroit steamboat inspection district. Mr. Galway finds, on reviewing the evidence, nothing to show negligence on the part of Mr. Neff, and no violation of the pilot rules. Incidentally he indicates the belief that the rule permitting passing signals in a fog was the real cause of the accident.

TORONTO CRAFT.

Frederick August Knapp's much talked of roller boat which has been under construction in Polson's shipyard at Toronto for some time past, is now afloat.

The vessel is cylindrical in shape and is 110 feet long over all and about 25 feet in diameter. The diameter is the same to within five feet of either end when the cylinder begins to taper, rapidly decreasing to a diameter of 15 feet at either end. The draft will be 23 inches.

The original design of the inventor has been considerably changed. Instead of having a heavy stationary cylinder around which the outer part would revolve as at first intended, there is nothing at all in the center of the hull. At either end there is to be a platform resting upon wheels which touch the revolving part. This platform will be weighted and remain stationary upon the principle of the squirrel in the cage.

On the platform will be placed two engines with upright boilers behind them. These engines will transmit power to a huge driving wheel placed between them, and this wheel will by a system of cogs cause the hull to revolve. There will be a platform similarly equipped at each end of the hull.

Platforms each travel on four big driving wheels and weight about fifteen tons with engine and boilers complete. Mr. Knapp proposed to suspend the platforms and use swinging gravity, but has allowed the engineers in charge of the construction to use the direct application. The whole craft will weigh 100 tons and 500 square feet of area will be in actual contact with the water.

The boat, which is expected by its inventor to travel at the rate of a mile a minute, will be steered by two huge rudders or tail boards, one at each end, just below the platforms. Steam steering gear will likely be used.

WRECK RECEIVERS.

Let us quote Chapt. 21 of 32-33 Vic., 1869, clause III, which reads as follows:

"Whosoever wilfully and unlawfully conceals or appropriates any timber, masts, spars, saw logs, or other description of lumber which having been adrift in any river or lake, or cast ashore on the bank or beach of any such river or lake, or wilfully and unlawfully defaces or adds any mark or number, on any such article or thing, or makes any false or counterfeit mark thereon, or refuses to deliver up to the proper owner thereof or to the person in charge thereof on behalf of such owner, any such article or thing, is guilty of a misdemeanor, punishable in like manner as simple larceny."

In this connection we print the following letter: Editor Marine Record:

I notice in your paper of the 2d inst., reference to receivers of wrecks not doing their duty. I would call your attention to the fact that the receivers do not receive any stated salary and the owners of goods taken charge of by the receiver do not at all times feel disposed to pay the receiver's fee, which is very small. This I know from experience, hence I know of what I speak.

I have enclosed you a notice bill which I have posted along the east shore of Lake Huron and the Georgian Bay but without the assistance of owners in prosecutions the receivers are powerless. I have tried on the behalf of owners of logs but in some cases failed which cost me money, for logs or timber are not within the meaning of the act wreck which you can see by the clipping from the Clinton News Record. Trusting you will take notice of the above and show that the owners are to blame and not the receivers.

BOATSWAIN.

A WEST BAY CITY SHIPYARD.

Capt. James Davidson, has given the Riverside Iron Works, of Detroit, a contract to build for him two engines. They will go into wooden steamers that he is building for the trade to Lake Ontario, each to be about 255 feet keel. Davidson continues to turn out wooden steamers, when practically every other builder on the lakes has abandoned that mode of construction.

Capt. Davidson is a millionaire and it was in the construction of wooden steamers and schooners that he made the bulk of his money. His first large steamer was the James Davidson, which was his own property to the time she foundered off Thunder Bay in 1883. Since then he has built 100 or more vessels. It is his rule not to build a boat on contract. He chafes under the limitations imposed by a contract, so he builds on speculation, and the steamer, when finished, embodies his ideas of what a steamer should be.

Then he puts her into his fleet and operates her for his own profit until such time as he gets the opportunity to sell her at a fair price. During the last four years, however, he has disposed of but one, the steamer City of Glasgow, to Cleveland parties. The result is that, as he has continued to build, he has accumulated a very large fleet, some 20 or more, mostly of a very large size. His steamer Appomattox is probably unsurpassed in size by any other wooden vessel on the lakes. His schooners, too, are big carriers for wooden vessels. The Appomattox, with a string of three of these, passed down the lakes a few days ago with between 12,000 and 14,000 tons of corn.

Capt. James Davidson has a large plant at West Bay City. But more than this, he has the money behind him that enables him to purchase timber at a great advantage. Again, he is enabled to give a purchaser long time in payment. This of itself has been sufficient to sell a large number of his boats. Though there is little demand from others for the service of ship carpenters, he pays them as much as they ever earned when everybody was building wooden vessels.

The Lake Ontario trade has never been tried by him before, at least he has never built anything especially suited for it. It is said to be his idea to carry flour and package freight from the upper lakes to not only American but Canadian ports. The success of the St. Paul and Minneapolis on that route is probably what induced him to attempt it. The boats will be of good depth and beam, and even if the venture does not pan out as well as he expects and he does not sell them they will always be in demand by lines that need package freighters, he thinks. He also has another steamer and two schooners which it is said, will be out in time for next season's business.

ERIE CANAL IMPROVEMENTS.

The delay that is being shown in completing the improvements on such parts of the Erie Canal for which contracts have been let, and the unsatisfactory condition of some sections that have been accepted as completed, are causing much concern among the canal boatmen. One of them who has just come over the entire length of the canal was asked for a statement, and according to Buffalo advices he states as follows:

"Nearly two years have elapsed since the people ratified, by an emphatic majority vote, the proposition to expend \$9,000,000 in improving the Erie, Oswego and Champlain Canals. Under the act as voted upon the state canal authorities were given three months before commencing active operations in improving these greatest of all the state's public works.

"As it is so generally known that the state, and more especially this port, is rapidly falling behind in percentage as an exporter and importer of the traffic of the great West and Northwest, it will, therefore, not be out of place to give a resume of what has been done and what has not been done and what has not been accomplished toward improving our most valuable canal system to keep pace with energetic rivals for the traffic which in all equity belongs to this state and the metropolis.

"The prevailing opinion among the navigators of our canals is that the work of improvement is far behind what it should have been under a rigid business management. First—Nothing has yet been done toward improving many miles of the several canals named; and, second, that portion of the canal that has been accepted as improved has been done in such a slipshod way as to cause serious delays to canal navigation, boats constantly coming in contact with rocks, bars and boulders where it is supposed that the Erie canal is deepened to the required depth of not less than nine feet of water. Sharp and projecting rocks have been left in the slope and retaining vertical walls, as well as at locks, which tear the boats and lines in a wretched manner. These jagged walls are left at numerous points from Rexford flats, of the upper aqueduct, to Buffalo.

"The policy of the general government and railway corporations is to expand their transportation facilities, while the plan of New York canal officials is to restrict the width of our canals by driving piles in the bottom or at the base of the walls, which will contract the state's waterways into hog-trough shaped ditches instead of broadening the channels of these greatest of commercial thoroughfares. This squeezing canal process is on the Port Jackson, the Jordan and Pittsford levels. The piles are sawn off underneath the water from two to four feet, which has already caused the sinking of several boats and thus damaging their valuable cargoes.

"Buffalo shows the most delinquent canal improvement work. This portion of the canal has to be pumped dry in order to improve navigation, for it is on the level of Lake Erie. The contractors of this portion of the canal, at an expense of thousands of dollars, had the canal ready for excavation about January 1 this year. The work of blasting and excavating it for a distance of one and one-half miles, from Ferry street to Charles street, also constructing retaining walls for a portion of the way, and so far simply deepening a large portion of the canal, is a magnificent piece of canal improvement; and between these points, had the state authorities compelled the contractors to have expended a few dollars in breaking off the projecting sharp rocks along the retaining walls as well as other sections of the canal, no one but a chronic grumbler could have found the least fault with said work. This work both the resident engineer and the contractors promised to have done before the dams were removed, but the water was let in without the obstructions being disturbed, and these projecting, jagged rocks, which are under water from two to six feet and projecting out into the canal from six inches to four feet, menace every cargo passing and coming in contact with the same; but where the most neglected portion of the canal can be seen with the naked eye is from Erie street bridge to Commercial street bridge. Between these two bridges is a distance of upwards of 1,000 feet which not only is a festering mass of Hamburg canal sewage which has poured forth its miasma gasses since the opening of navigation to date, but no attempt has been made to abate this nuisance by the canal powers that be, and the navigators of the State's great water highway have been denied the use of this most important end of the Erie canal. Rank weeds of from six to eighteen inches in height have been left to flourish in the festering bottom of the same; the only thing done toward an attempt to improve this short distance has been to drive piling along the bottom of the old dilapidated walls to keep them from tumbling into the prism. Such work has narrowed its channel from three to six feet, which will prevent the passage of four boats, and will narrow it down to a width of only three boats, which is an outrage, to say the least. The Commercial Slip, which is a continuation of the Erie Canal to the Buffalo River, is about five hundred feet in length. This slip, or canal proper, has been permitted by the canal authorities to be filled in to a large extent by the adjoining soap and tannery refuse which has filled it up at one point a foot above the water. In other words, the State officials have permitted the canal to be filled in with refuse at a point where full nine feet of water was provided last year at State expense; yet the canal interests were told last winter that not only Buffalo, but all other cities and towns from one end of the canals

to the other, should not be permitted to run sewage into them. Yet it would seem that pie-crust-like promises are solely made to be broken, that, too, with impunity in this case, as with the wholesale pilfering of canal water that is permitted to go on for the benefit of local milling and manufacturing concerns.

"Nor is this all: the towpath is being narrowed instead of widened; as it requires more mule power to tow double and treble headed than it used to require where only single boats were moved years ago. Not only that, but local quarrymen, lumber dealers, etc., are permitted at various points to blockade both towpath and berme banks with all sorts of material, to the serious detriment of the navigators on the people's waterways.

"When the Utica break occurred a short time since, boats were detained long enough at that point to have fixed the leaky lock at Syracuse; but the unfortunate west-bound boatman was delayed a week at Syracuse in order to permit the delinquent canal authorities to repair that structure.

"This lock had just been repaired when contractors were permitted to close the Camillus feeder in order to build a culvert under the same, which work should have been done after the canal was closed. Thus boats have been purposely detained on the shallow Jordan or Summit level for weeks and weeks. In point of fact, too sharp criticism cannot be indulged in for the delayed condition of canal improvement from Buffalo to Albany and from Albany to Whitehall, also from Syracuse to Oswego.

"In conclusion the canal officials should be held to a strict accountability, as the State has, according to the statements of Superintendent of Public Works Aldridge and State Engineer Adams, provided ample funds for the speedy prosecution of such needy improvements to our canals.

"The improvement in the three canals from end to end should be fully completed on or before the opening of navigation in May next."

MARITIME LAW.

Admiralty Jurisdiction—House Boat—Lien for Towage—

Rogers V. A. Scow Without a Name.

(District Court, E. D. New York, May 17, 1897.)

A scow which had been fitted up with a cabin and other appurtenances to serve as a house boat, was chartered for the season, the owner agreeing with the charterers to share the profits after a certain date. The charterers engaged the libellant to tow them to New London and back, without informing him that it was a chartered vessel. The answer in the case objected to the jurisdiction, that there was no admiralty lien on such a craft, and that the charterers were liable for the towage. Held, that the house boat was subject to admiralty liens, and that the towage was done on credit of the boat. This was a libel in admiralty by Robert Rogers against an un-named scow to enforce an alleged lien for towage. The scow had been fitted up with a cabin and other appurtenances to serve as a house boat. It was then chartered for the season, the owner agreeing to share the profits with the charterers after a certain date. The charterers procured the libellant to tow them to New London and back, without informing him that the boat was chartered. The claimant set up in his answer a want of jurisdiction in the court on the ground that such a craft was not the subject matter of an admiralty lien, and that the charterers were liable for the towage.

Benedict, District Judge. I have no doubt as to the jurisdiction of the court to entertain a proceeding to enforce a claim for towage against a house boat, and it seems to me that the evidence shows that the towage sued for was performed on the credit of the boat and her owners, in good faith. There was no bad faith in the transaction, and, in my opinion, the case of the Kate, 164 U. S., 458, 17 Sup. Ct. 135, relied on by the claimant does not apply. Decree for the libellant for the sum of \$200.

THE HERCULES.

THE SEA QUEEN.

In re SHIPOWNERS' & MERCHANTS' TUGBOAT COMPANY.

(District Court, N. D. California, May 28, 1897.)

Towage—Duty of Tug—Buoy Marking Obstruction.

The master of a tug plying in a busy harbor is not justified in relying absolutely upon the presumption that a buoy, placed by the government to indicate a dangerous obstruction to navigation in such harbor, is in its proper position, but is bound, especially when towing a large ship past the obstruction, to observe the bearing of such buoy, and watch for any change in its position, and to be so familiar with the actual location of the obstruction as to be put on his guard by a displacement of the buoy amounting to 200 feet in distance and making a difference of a point and a half in its bearing.

THE MONTICELLO.

PACIFIC IMP. CO. v. HATCH.

(District Court, N. D. California, May 3, 1897.)

1. Salvage—Decree of Danger—Compensation.

That a vessel is in part disabled, and that the state of the wind and sea is such as would in time probably cause her to drift ashore, is no ground for greatly increasing the compensation, when it is certain that assistance would in any event have reached her before the danger became imminent.

2. Same—Salvage Services—Compensation.

When a steamer with a disabled boiler was proceeding under a jib sail, and was in no danger of going ashore before assistance sent for would arrive, held that the taking of her in tow by a passing steamer, in the ordinary weather of the season, if a salvage service at all, was of a very low order, and, the time consumed being some five hours, the sum of \$350 would be allowed; the salving vessel being worth with her cargo about \$445,000, and the salved vessel about \$12,000.

3. Same—Towage Compensation.

The towage into port of a disabled vessel by a freight or passenger steamer, which is necessarily delayed somewhat thereby, even if under circumstances scarcely rising to the dignity of a salvage service, will be compensated at a somewhat greater rate than that of mere towage by tugs intended for the purpose.

Libel for salvage services. Stipulated value of Monticello was \$12,000. She had no cargo or passengers, and was out of commission. She was in no particular or immediate danger, and tugs from San Francisco were on their way up to tow her, and would have reached her some four or five hours after she was taken in tow by the San Benito. The Monticello was disabled, her boiler having become broken down, and she was being navigated with but one sail—the jib. She was from 8 to 15 miles from the coast. The service lasted about seven hours and a half. No dangers or risks attended the performance of the service. Three hundred and fifty dollars allowed as salvage.

HURLBUT et al. v. TURNURE et al.

(Circuit Court of Appeals, Second District, May 26, 1897.)

1. General Average—Short Coal Supply—Responsibility of Ship.

A mere deficiency of five or even ten tons, below the customary and probably adequate supply of coal for the contemplated voyage, does not make the ship an insurer against damages, so as to exempt the cargo from a general average charge in respect to damages not arising from the deficiency. 76 Fed., 587, affirmed.

2. Same—Port of Refuge Expenses.

A steamship which fails to take the customary supply of coal for the voyage must be presumed to voluntarily assume the risk of putting into a port of refuge to complete her supply; and she will therefore be chargeable with the port of refuge expenses, even if, as it turns out, she would have been obliged, because of delays from adverse storms, to seek such port for a further supply, though she had started with the usual quantity. 76 Fed., 587, affirmed.

3. Same—Bill of Lading.

A provision in the bill of lading authorizing the vessel to "call at any port or ports whatever" does not enable her to escape responsibility for the expense of putting into a port of refuge, in consequence of having taken an inadequate coal supply. 76 Fed., 587, affirmed.

4. Same.

A steamship bound from a Cuban port to New York had but 9½ days, supply of coal, whereas the customary supply was for 10 days. Ordinarily, the voyage would have taken 8 days, but she encountered a hurricane, which delayed her so that she was obliged, from lack of coal, to put into Newport News, which she reached in 12 days, having consumed considerable quantities of ship's materials and cargo. The bills of lading authorized her to call at any port or ports whatever. Held, that the ship must bear, as particular average, the expense of putting into Newport News, and also the loss of ship's materials and cargo during the time the coal she ought to have taken would have lasted, but that the remainder of the loss was a general average charge. 76 Fed., 587, affirmed.

Appeal from the District Court of United States for the Southern District of New York.

TACOMA COMMERCE.

Harbormaster Hoflin makes the following report of the ocean commerce at the port of Tacoma for the month of August, 1897:

FOREIGN IMPORTS.

Tea, silk and merchandise from China and Japan per S. S. "Columbia"..... \$756 945 65
Previously reported 4 701 752 62

Total imports eight months.....\$5 458 698 27

FOREIGN AND COASTWISE EXPORTS.

11,577 barrels of flour to China and Japan.... 45 023 76
1,663,196 feet of lumber, China and Australia 14 168 00
3,995,000 feet of lumber coastwise..... 34 590 00
32,450 tons of coal coastwise..... 101 885 00
Miscellaneous merchandise, China and Japan 89 471 24
Miscellaneous merchandise, British Columbia 30 486 28
Miscellaneous merchandise, coastwise 100 560 00

Total \$416 189 28
Previously reported 3 413 067 55

Total exports eight months.....\$3 829 256 83

Inward tonnage registered 4,482; outward tonnage registered 49,244. Inward tonnage cargo 4,246; outward cargo tonnage 41,338; deep sea arrivals 51; departures 37.

A RIGHTEOUS DECISION.

Judge Moer handed down a decision in the Duluth district court this week, which is of considerable importance to vessel owners in the wheat carrying trade.

For many years past vesselmen have made much complaint of being compelled to pay for shortages in their cargoes, but have been unable to obtain redress. In loading and discharging cargoes it very often happens that through a mistake on the part of the state weighmen vessels are accredited with more gain than they actually receive, and when the grain is delivered to the consignee the vessel is called upon to pay for the amount which the cargo is short. Many suits have grown out of this, and in each instance the vessel owner has been compelled to pay for grain which he never received.

In 1890 the steamer Frontenac cleared from the port of Superior with a cargo of 81,000 bushels of wheat loaded at the Great Northern elevators. When she came to unload at Buffalo it was found that she was 1,502 bushels short, and the consignee brought suit against the Cleveland Iron Mining Co., owner of the Frontenac, to recover the value of the missing wheat. In the trial court the decision went against the plaintiff, the court deciding that the grain had never been put on the vessel, and that in consequence her owners were not liable. The case was carried to the United States Court of Appeals, which reversed the decision of the lower court, and held the vessel liable. The shortage was paid, and the vessel owners brought suit against the elevator company for damages. The latter set up the claim that as the wheat was certified to by the state weighman the elevator was relieved from liability, and if there was a shortage the state of Minnesota was the proper party to hold responsible. The Eastern Railway of Minnesota, owner of the elevator, was made a party to the litigation and the suit pressed, with the result that the court rendered a decision that as it is clear that the wheat had never been put into the boat the elevator company is responsible for the loss to the vessel, notwithstanding the fact that the amount of the cargo was certified by the state authorities.

An appeal will be taken and the suit contested.

BUFFALO COAL TRADE.

The following statistics of the coal trade of Buffalo for 1897 to September 1st, with comparisons of preceding years, were compiled by Mr. William Thurstone, the secretary of the Merchants' Exchange:

Receipts of coal by railroad not reported by request. Receipts by lake for August, none, and none for several years past. Shipments by lake for August, 281,983 net tons, as compared with 543,236 net tons in 1896 and 319,860 net tons in 1895; for the season to September 1st 951,171 net tons, as compared with 1,237,034 net tons in 1896 and 1,149,680 net tons in 1895. Receipts by canal for month of August 4,737 net tons, as compared with 10,449 net tons in 1896 and 3,509 net tons in 1895; for the season to September 1st 4,737 net tons, as compared with 19,346 net tons in 1896 and 5,482 net tons in 1895. Shipments by canal for August none, as compared with 24 net tons in 1896 and 897 net tons in 1895; for the season to September 1st none, as compared with 755 net tons in 1896 and 4,289 net tons in 1895. The aggregate shipments of coal this season to September 1st show a decrease of 285,863 net tons under 1896 and 198,509 net tons under 1895.

Lake freights on coal from Buffalo for August this year were 20 cents to Chicago, Milwaukee, Duluth and Lake Superior ports, Gladstone, Toledo and Washburn; 25 cents to Green Bay, Detroit, Racine and Bay City and 35 cents to Saginaw per net ton. A year since the rates were 30-20 cents to Chicago and Milwaukee; 25-20 cents to Duluth and Lake Superior ports, Green Bay and Toledo; 40 cents to Saginaw and 25 cents to Detroit and Bay City.

The distribution of coal thus far this season was about as follows. 393,643 net tons to Chicago; 165,681 tons to Milwaukee; 144,850 tons to Duluth; 11,750 tons to Racine; 11,945 tons to Green Bay; 120,139 tons to Superior; 500 tons to Kelley Island; 700 tons to Grand Haven; 6,710 tons to Saginaw, 850 tons to Marinette; 32,170 tons to Toledo; 1,971 tons to Lake Linden; 400 tons to Marine City; 300 tons to Mackinaw City; 7,300 tons to Marquette; 5,938 tons to Fort William; 2,250 tons to Sault Ste. Marie; 3,600 tons to Manitowoc; 6,275 tons to Kenosha; 700 tons to Muskegon; 4,350 tons to Bay City; 3,078 tons to Port Huron; 7,750 tons to Gladstone; 3,600 tons to Wash-

burn; 600 tons to Portage; 5,650 tons to Hancock; 195 tons to Alpena; 500 tons to Byng Harbor; 800 tons to Michigan City; 700 tons to Benton Harbor; 580 tons to Sturgeon Bay; 1,100 tons to Amherstburg; 330 tons to Sand Beach; 25 tons to Oscoda; 1,200 tons to Port Arthur; 1,300 tons to Detroit; 700 tons to St. Joseph, and 11,500 tons to various ports by vessels clearing from Tonawanda and taking cargoes which were not reported at the custom house.

TO REDUCE THE ROLLING OF SHIPS.

Two very important means of diminishing the extent of rolling of ships have been carefully investigated, and the application of these means in any particular vessel is open to every naval architect. The less important of these means, as being the less certain in its action, is the fitting up of a water chamber on board the ship, so contrived that the action of the water inside the chamber shall as nearly as possible be always in antagonism to the rolling of the ship, tending to bring the ship to port at the time she is starting to roll to starboard, and vice versa. The names most closely associated with this means, and its theoretical and practical investigation, are Mr. R. E. Froude, Mr. Watts and Prof. Biles. The more important of the means of diminishing the extent of rolling is the application of bilge keels to the chocks—structures attached to the bilges for something like half the length of the ship, and projecting from the skin of the ship to the extent of 8 to 36 inches, according to the size of the ship and the desire to take full advantage of their action. The most recent and most thorough-going investigation

THE FUEL SUPPLY AND AIR SUPPLY OF THE WORLD.

At the recent convention of the various sections of the British scientists at Toronto, Ont., the lecture or address of Lord Kelvin on "The Fuel Supply and Air Supply of the World," was honored with the closest attention, as the distinguished and learned gentleman placed a limit on the life of the earth. He declared, "In vegetation is the life of the world," and the following is a condensation of his own lecture:

"All the known fuel on the earth is the residue of ancient vegetation. One tons of average fuel takes three tons of oxygen to burn it, and therefore its vegetable origin decomposing carbonic acid and water, by power of sunlight, gave three tons of oxygen to our atmosphere.

"Every square meter of the earth's surface bears ten tons of air, of which two tons are oxygen. The whole surface is 124,000,000 acres, or 510,000,000,000 of square meters. Hence there are not more than 340,000,000,000 tons of fuel on the earth. And most probably all the oxygen of our atmosphere that came from primeval vegetation.

"The purely available coal supply of Great Britain (England and Scotland) was estimated by the coal supply commission of 1838, which included Sir Roderick Murchison and Sir Andrew Ramsey among its members, as being one hundred and forty-six thousand million tons. This is approximately six-tenths of a ton per square meter of area of Great Britain. To burn it would take one and one-eighths tenths of a ton of oxygen, or within two-tenths of a ton of the whole oxygen of the atmosphere

ABSTRACT OF BIDS.

Abstract of bids received for building two breakwater piers at Lake Superior entrance to Portage Lake Ship Canals, Mich., and opened by Major Clinton B. Sears, Corps of Engineers, U. S. A., at Duluth, Minn., September 10, 1897.

No. of Bid.	NAME AND ADDRESS OF BIDDER.	SEC. 1, E. & W.		SEC. 2, E. & W.		For Stamp Sand in Place in Work.	TOTAL	
		If Superstructure and top two Courses of Crisbs be of—		If Superstructure and top two Courses of Crisbs be of—			(Exclusive of Stamp Sand.)	
		Nor. Pine 3800 Lin. Ft.	Wht. Pine 3800 Lin. Ft.	Nor. Pine 1680 Lin. Ft.	Wht. Pine 1680 Lin. Ft.		Norway Pine.	White Pine.
		Per Lin. Ft.	Per Lin. Ft.	Per Lin. Ft.	Per Lin. Ft.	Per cu. yd. Cents.		
1.	Porter Bros. Duluth, Minn.	\$63.55	\$65.25	\$23.49	\$24.22	70	\$280,953.20	\$288,639.60
2.	Lydon & Drews Co. Chicago, Ill.	70.00	71.35	26.00	26.50	60	309,680.00	315,650.00
3.	L. P. & J. A. Smith Co., Cleveland, O.	72.39	73.39	28.97	29.97	50	323,751.60	329,231.60
4.	McArthur Bros. Co. Chicago, Ill.	80.00	82.00	31.00	31.81	85	356,080.00	365,040.00
5.	Heldmaier & Neu Chicago, Ill.	81.40	32.75	55	364,340.00
6.	Chicago Star Con. & Dreg. Co., Chicago, Ill.	68.50	70.00	30.25	31.00	95	311,120.00	318,080.00
7.	Joseph J. Churchyard, Buffalo, N. Y.	79.50	81.25	31.80	32.60	25	355,524.00	363,518.00
8.	James L. Lipsett, Robert Gregg, Sault Ste. Marie, Mich.	68.50	69.75	28.00	29.10	38	307,340.00	313,938.00
9.	I. V. Hoag, Jr. Pittsburgh, Pa.	71.00	71.00	71.00	71.00	99	389,080.00	389,080.00
10.	Powell & Mitchell, Marquette, Mich.	73.15	74.55	30.20	30.95	75	328,706.00	335,286.00

of their use and efficiency is that of Sir William White and Mr. R. E. Froude in connection with the bilge keels to H. M. S. Revenge.

Experiment in this case seemed to show that the extent of rolling, after fitting the bilge keels, was only about one-third the extent without the bilge keels. This was the case when the ship was not propelled by her machinery; when, on the other hand, she was so propelled, even at a moderate speed, the effect of the bilge keels was even more marked.

Previous experiments with other ships had shown a diminution of rolling due to the fitting of bilge keels of one-half, and for bilge keels of sufficient size that may probably be taken as the least that may be expected. It is, to some extent, a wonder that, such being the case, ships should ever be built without these valuable adjuncts, and it is probable that, until something better is devised, the future will see an increasing number of ships in which full advantage is taken of a means of giving steadiness so effective, and, at the same time, so moderate in cost.—F. P. Purvis, in Cassier's.

The demonstration of a United States naval force in Moorish waters has had a wholesome effect, so far as the treatment of Americans and their interests in Morocco is concerned. Reports just received at the Navy Department indicate that great solicitude is being shown for all things American, and Navy Department officials trace this to the visit of the San Francisco and Raleigh to Moorish waters.

resting on Great Britain (England and Scotland).

"The commission estimated fifty-six thousand million tons more of coal as probably existent at present in lower and less easily accessible strata. It may be, therefore, considered as almost certain that Great Britain could not burn all its own coal with its own air, and therefore that the coal of Great Britain is considerably in excess of the fuel supply of the rest of the world, reckoned per equal areas, whether of land or sea."

Lord Kelvin set his hearers' mind at rest. He told them that it was extremely probable that the oxygen would run out before the coal. As there would not be much use for coal if oxygen ran out, the race need not worry about the fuel supply.

Recent English papers contain accounts of the launching of two magnificent ships for the Elder-Dempster Co., of Liverpool and Montreal. One was launched at Wallsend-on-Tyne, and christened the "Monarch." She and her sister ship, the "Milwaukee," are the largest freight steamers yet built in England. Her dead weight cargo capacity is 11,500 tons, while her measurement cargo is over 18,000 tons, besides 700 tons of bunker capacity. Her length is 483 feet, beam 56 feet, depth 42 feet 3 inches to the shelter deck. She has 12 steam winches for handling cargo, is lighted by electricity, and the cattle stalls, etc., are of the latest type. The other boat, the "Montrose," was launched at Middleborough. She had a dead-weight capacity of over 8,000 tons, is 460 feet long, 52 feet beam and 30.7 feet deep. She is fitted up with cold storage apparatus for dairy produce, etc.



ESTABLISHED 1878.

Published Every Thursday by

THE MARINE RECORD PUBLISHING CO.,

Incorporated.

GEO. L. SMITH, President.

C. E. RUSKIN,	-	-	-	Manager.
CAPT. JOHN SWAINSON,	-	-	-	Editor.
THOS. WILLIAMS, Chicago,	-	-	-	Associate.

CLEVELAND,
Western Reserve Building.CHICAGO.
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All communications should be addressed to the Cleveland office.

THE MARINE RECORD PUBLISHING CO.,

Western Reserve Building, Cleveland, O.

Entered at Cleveland Postoffice as second-class mail matter.

CLEVELAND, O., SEPTEMBER 16, 1897.

What is now required on the lakes is a self trimming steamer. We call the attention of our vessel builders to this fact, although knowing that one or two of the designers have attempted to reach the point required. Coal, iron ore and grain should be trimmed automatically and will be if the inventive powers of consulting engineers and shop constructors are up to date. There is no reason why hulk cargoes should not be placed where wanted without other manual labor after it is poured into the holds of vessels.

The general managers of underwriting firms on the lakes should grant a bonus to shipmasters sailing clear of all trouble or expense, say for a series of years, two or more. This feature should not be left to the owners exclusively, as what benefits an owner is certainly of advantage to the assurer. The manager of the Rockefeller Line at Cleveland has endeavored to follow in the footsteps of the best practice observed on the ocean, by granting a season bonus; so also has the Goodrich Line at Chicago. Now we call upon the underwriters or their agents to go and do likewise, the owners taking care of uninsured departments and the underwriters protecting their generally well-earned premiums by an extra protection in the form of a percentage of premiums for safe navigation.

NICARAGUA CANAL SITUATION.

The Bureau of American Republics presided over by Hon. Joseph P. Smith, is publishing articles setting forth the importance of a ship canal across the Isthmus of Panama. A statement in the September issue conveys a vivid impression of the great importance of such an undertaking, and makes clear the fascination which it has exercised upon the minds of men for many generations. Especially has it been the subject of the best thought of the world's great engineers, since the construction of the Suez Canal has proved the practicability of such an enterprise and has demonstrated its far-reaching consequences to the commerce of the world. The question of finding a shorter route from the Atlantic to the Pacific than that via Cape Horn has occupied the intellect and ingenuity of seamen, engineers, inventors, political economists, and statesmen ever since the fading of the dream of the Spanish and other early navigators of discovering an open waterway to the East. The problem of overcoming the difficulty of the narrow isthmus connecting the two continents of America was but partially and ineffectively solved by the building of the Panama railroad in 1855. The success attending that en-

terprise, such as it was, served only to stimulate interest in the project conceived by Alexander von Humboldt, half a century before, of uniting the two oceans by a canal. Various plans were proposed, but it was not until De Lesseps, the builder of the Suez Canal, began his stupendous and ill-fated attempt, in 1881, to cut a sea-level canal from Colon or Aspinwall to Panama, at the narrowest part of the Isthmus, that work was actual begun.

In the long discussion which had preceded this initial step, various routes across the Isthmus had been proposed, but the consensus of opinion had by this time settled upon three as the more feasible. The Isthmus of Tehautepec route was practically eliminated, because of the great distance of the cutting (over 130 miles) and the enormous expense resulting from the difficulties to be overcome in the nature of the ground. For a time the question of building a ship railway, as urged by the distinguished engineer Capt. James B. Eads, continued to attract attention to this route, and the project still has able advocates; but the construction of a railroad across the Isthmus by the Mexican government seems to have relegated the Tehautepec canal enterprise to comparative obscurity. The railroad, however, is likely to be an important contributor to the economy of transit from the Atlantic to the Pacific.

Eliminating Tehautepec as a canal route, the Nicaragua and Panama routes are the only ones which need now be considered. De Lesseps seems to have decided in favor of the Panama route because he believed it possible to build a tide-level canal at that part of the Isthmus, whereas the topography of the Nicaragua route makes locks indispensable. It has been found, however, after an enormous expenditure of money, that De Lesseps's estimates were at fault, and that locks will be necessary to the successful completion of the canal. Work, which was suspended in March, 1889, was resumed in 1894, and a recent statement asserts that one-fourth of the canal has been built.

Director Smith expresses his ideas as follows: "It is not as a money-making project, but as a great inter-continental agency, that the Nicaragua Canal appeals most powerfully to patriotic minds in all the Latin-American countries as well as in the United States. Built by American capital, with the active aid and support of all the American governments, and operated and controlled by American agencies, how could it fail to become immensely useful in the great task of welding together the common interests of all America in trade, in political development, and in the power of resistance to any common foe from without? The Clayton-Bulwer treaty between the United States and Great Britain has been used as an argument against the possibility of such effective control, but if that treaty be still a vital force, it is scarcely to be supposed that Great Britain, after having formally acceded to our most recent interpretation of the Monroe doctrine asserting the independence of American interests from all European interference or control, would seek again to jeopardize her relations with the United States by seriously combating an enterprise which so obviously has the interests of both the western continents to serve. Nor is it clear that anything material would be lost to American progress and development even if the neutrality of the canal, for which the Clayton-Bulwer treaty provides, be guaranteed afresh. On the contrary, it might be for the benefit of all if such neutrality were scrupulously guarded and enforced. The essential thing is that the American Republics should be protected from the closing of the canal, or its use against them in time of war.

"The material benefits to be derived by the American Republics from the building of any canal across the Isthmus must be obvious from the most cursory examination. Not only would the Atlantic and Gulf coasts of the United States be brought much nearer by sea to its Pacific coast, but also to the Pacific coasts of Mexico, Central America, and South America, and the Pacific seaboard of these countries would obtain much shorter and easier routes to the West Indies, the Caribbeian and Atlantic coasts of their sister Republics of Latin America, and also to Europe. The development of land transportation and internal commerce would undoubtedly be immense. The railroads, far from being injured as some have suggested would be greatly benefited."

Capt. William L. Merry, of San Francisco, the new

United States minister to Nicaragua, Salvador and Costa Rica, has shown this in a recent paper in a very striking way. He says:

"When the lock canal as Sault Ste. Marie was first opened the railways feared injury to their business. They would have prevented its construction, but, fortunately for themselves, the waterway between the Great Lakes was opened and the Lake Superior region given cheap freights by water. Note the result. Through that greatest of artificial waterways in point of traffic, nor excepting the Suez Canal, in 1895, 15,062,580 of registered tons passed; population has increased, towns have sprung up, and more railroads have been demanded to meet the enormous resultant traffic. Is it not evident that the cheap waterway has here aided railway earnings? But for cheap water carriage millions of tons of ore would to-day be in the native ore beds, and the pioneer railways that feared competitive water transportation earning a precarious right to exist. Turn now to the Erie Canal as another object lesson. Two of the finest railway systems in the world occupy its banks with double tracks and the thunder of trains day and night argue for the cheap water transportation which, in competition, has made them possible. Compare the strikingly different financial status of the Erie railroad, which has no water competition, stock 14, with that of the New York Central, stock 101, having water competition of the Hudson River and the Erie Canal. Both are representative railway systems and afford a striking illustration of the argument presented."

Mr. Lewis M. Haupt, a distinguished engineer of Philadelphia, and a member of the board recently appointed by President McKinley to survey the Nicaragua Canal route, thus summarizes the practical advantages of an Isthmian canal, with more particular reference to the Nicaragua enterprise:

"Although centuries have passed since the long-desired short cut to India was first exploited, the lamentable fact remains that such water route is not yet an accomplished fact. It is a serious reflection upon the intelligence, integrity, and energy of the people of the American continent that after many years of exploration and survey, following by discussions ad infinitum, the only definite conclusion reached is that such a waterway is entirely feasible, and can probably be constructed within a cost of \$130,000,000, although competent engineers have placed the minimum of cost at less than \$100,000,000. In the meantime the discussion continues, and the active and subtle opposition arising from vested interests, which fear injurious effects, urges delays, further surveys, and deeper investigations, while the commerce of the world is turned 10,000 miles out of its course at enormous expense and loss of time. Thus, in the days of clipper ships, sailing at an average speed of 110 miles per day, the round trip from New York to San Francisco 38,000 miles) occupied 344 days; to Calcutta 46,000 miles via Cape Horn) 418 days, or (35,000 miles via Good Hope) 318 days, whereas by way of the Isthmus the same points could have been reached in 90 and 244 days, respectively, thus saving 254 and 74 days on these journeys. The economy of this time to the owners of the vessels for cost of crew, interest and insurance is estimated at \$2,993 per month, and hence if 254 days on the round trip were saved it would represent \$25,340, to say nothing of the increased value of the cargo due to more speedy and certain delivery. This saving, if capitalized at four per cent, represents \$633,500 on a single vessel, and on 100 vessels per year it would be \$63,350,000, or almost equal to the estimated total cost of the project. Yet no account is taken of the value of the cargo, the reduction of marine risks or losses, or the large tonnage carried in steamers.

The gain in shortness of transportation via the Nicaragua route, appears clearly from the following statement of distances in statute miles from New York to the Pacific Ocean.

Via water line to Cape Horn	7,897
Via Southern Pacific R. R.	3,709
Via Canadian Pacific R. R.	3,619
Via Central Pacific R. R.	3,340
Via Northern Pacific R. R.	3,237
Via Nicaragua Canal	2,519

In other words, the all-water route to the Pacific, via Nicaragua, is shorter than any railway across the continent, being 821 miles shorter than the customary route between New York and the Pacific via the Union and Central Pacific railways.

Acting in accordance with a law passed by Congress

in 1895, President McKinley, on July 9, 1897, appointed as the board of survey, Rear-Admiral John G. Walker, United States Navy, retired; Capt. Oberlin M. Carter, Corps of Engineers, United States Army, and Lewis M. Haupt, of Pennsylvania, civil engineer. Their report will doubtless determine definitely the route of the canal and the probable cost of the work. What assistance, if any, will be given by the government of the United States to the construction of the canal is, of course, a matter which Congress must finally decide.

MUST DEPEND ON GRAIN AND COAL.

The freight market displayed considerable weakness during Monday, Tuesday, Wednesday and Thursday, and there were fears that the rate from the head of the lakes would decline from 70 cents to 65 cents. The prolongation of the coal strike and a decline in the Chicago grain market are responsible for the existing conditions. It is expected that bituminous coal will be moving in about a week and grain shipments from Duluth can not be delayed much longer. On Wednesday vessels contracted to move ore from Ashland to South Chicago during the next thirty days at 70 cents. Coal and grain from the head of the lakes are needed to give the freight market strength.

The important negotiations pending between the Andrew Carnegie interests and mine owners are responsible for a great deal of speculation. It may be said that no arrangement for the Tilden mine has been completed as yet, though negotiations are still going on, and the property will no doubt be taken if certain conditions now under discussion are complied with. The Norrie negotiations stand practically as stated a week ago. The options obtained cover considerably more than a majority of the stock. The effect of ownership of old-range Bessemer properties by the leading Pittsburg interest is being discussed as though such ownership were accomplished fact, as indeed it may be taken to be, the uncertain quantity being its extent. It is evident that the days of any considerable fluctuation in ore prices and therefore of any large profits in iron mining will not return. The effort seems to be, on the part of great steel interests, not so much to insure a lower ore cost than is possible to some home competitor—for this year has shown that a low cost to one means a low cost to all—but rather to make sure of the lowest attainable cost, as against the world. In other words, the foreign market rather than the home market is the shaper of policy. It would not be surprising, therefore, to see further steps in the direction of concentration, by other important steel interests.

The Iron Trade Review says in its current issue that ore selling has brought the trade to the point at which very little association ore is available, and on the lots yet to be disposed of it is to be expected that an advance in price will be secured. Non-bessemer, early sales of which were based on the 40 and 45 cent rate from Escanaba, have sold enough higher, of late, to cover lake freight advances. The freight market to-day is easy at 55, 65 and 70 cents, Escanaba, Marquette and the head of Lake Superior. Coal shipments will not begin until the middle of next week, and in the last few days a car scarcity at Buffalo has retarded the grain movement. It is evident that ore shippers are not anxious for wild tonnage, so that coal and grain will be the chief support of the situation from this time out.

The lumber freight has advanced to \$1.82 1-2 from Ashland, but Duluth grain charters are still being made at 2 cents.

A NEW WORLD'S RECORD.

The whaleback Christopher Columbus, which has gone into winter quarters at West Superior, broke all passenger carrying records. During the summer she carried 81,143 passengers. This is a new world's record, not only for passenger business on the Great Lakes, but easily surpassing in volume anything previously known in marine history—river, lake or ocean—anywhere. The World's Fair record at Chicago was outdone by many thousand passengers. The bulk of the business was done between Chicago and Milwaukee, and the results are regarded as significant, being attributed in part to the return of prosperity, the latter portion of the season being the most successful.

HYDROGRAPHIC OFFICE CHANGE.

Lieut. Charles S. Ripley, who has been in charge of the Chicago branch hydrographic office for the past two years, has been detached and ordered to report for duty on board the United States ship Marblehead at New York city, October 21. The vacancy at the hydrographic office will be filled by Lieut. Simon Cook, United States Navy, who has been detached from the United States ship Puritan, and ordered to assume charge of the office October 23. In the meantime the office will be in charge of W. J. Wilson, the assistant.

REVERSED THE DECISION.

Supervising Inspector Galway, of the Detroit steamboat inspection district, has reversed the decision of the Port Huron local inspectors, Danger and Van Liew, by which first mate Sidney O. Neff, of the steamer Ira H. Owen, was held to blame for the recent collision of that steamer with the Susquehanna off Thunder Bay. Mr. Neff had his license suspended for ninety days, and made an appeal with the assistance of an attorney.

Mr. Galway gave the evidence of both sides careful consideration, and says he can find nothing in the allegations that show carelessness or negligence on the part of Mr. Neff in the management of his steamer, nor evidence of a positive nature that would point to a violation of the pilot rules by either steamer. Taking the testimony of the officers and crew of both steamers, which is all there is to pass an opinion upon, it would appear that both boats were proceeding at a moderate speed, as provided in the rules.

"Just prior to the collision," says Mr. Galway, "or at the time passing signals were given and answered, there was no doubt a misjudgment as to the relative positions of the two boats, which was in reality the cause of the collision, but as passing signals are permitted in thick and foggy weather under rule 23 of the pilot law, officers cannot be censured for using them."

ELEVATOR POOL TO DISSOLVE.

During the week it was announced that the celebrated Buffalo elevator pool had confessed its inability to compete with the independent elevators. It is stated that the trust will survive until the season closes, although this is not certain. The disruption of the organization has been expected since last spring, and, therefore the announcement from Buffalo did not cause surprise. Low handling charges are anticipated. The pool has withstood all attacks for many years, and was known as one of the most successful combinations in the country. The dissolution was brought about by competition, the very thing it was organized to guard against. So many outside elevators have started up in the city that the business of the pool was seriously interfered with. This led to hints of the withdrawal of some of the members, and it was agreed that the wisest thing would be to discontinue the organization.

Secretary Cook of the pool says that the end of the season would witness the end of the pool. He added that there was a possibility of the breaking up coming before the close of navigation. Members of the trade are divided over this, however. Some think it would be foolish to break up the association now, when there is so much business for the elevators. But all are agreed that the encroachment of the Ryan, Raymond and Export, especially the last, has been serious. In addition the new Northern elevator, larger than all the rest of the opposition together, will be put in operation, and also the Electric. All of these houses have refused to join the pool, and the Ryan and Raymond are at work at half rates.

There is any amount of speculation over the apparent lay down. Some are of the opinion that it is not genuine and is merely a feeler while others hold that the pool has given it up and will make no further effort to hold together. It is freely predicted that grain will be handled for a quarter of a cent soon, but no one really knows what is in the wind.

ORE AND SOFT COAL.

Reports from all upper lake shipping ports to the Ore Dealers' Association of Cleveland show a total ore movement to September 1 of 7,712,158 gross tons, against 7,104,092 tons on the same date a year ago, or a gain of 608,066 tons. Shipments during August were the heaviest

in the history of the business, close to the 2,500,000 mark. On the other hand soft coal shipments to all Lake Superior ports (correct figures regarding Lake Michigan coal trade are not available) to September 1 aggregated only 1,015,627 net tons, a decrease of more than 700,000 tons as compared with the same date a year ago. A similar decrease would probably be shown in Lake Michigan shipments if figures could be had. During the full season of 1896 there was shipped to Lake Superior 2,626,130 tons of soft coal, so that in order to reach the total of last season it would be necessary to move to Lake Superior alone 1,600,000 tons of coal in the next two months.

AMENDMENTS TO "SOO" RULES.

The text of the amendments to the regulations for the navigation of the "Soo" River, as given out by Capt. Shoemaker, chief of the revenue cutter service, are as follows:

"Hereafter, whenever a steamer bound down the St. Mary's River in the day time enters the 'Dark Hole,' a white flag will be displayed on a pole at Johnson's Point, Sailors' Encampment, in said river, until the steamer is abreast of Johnson's Point, and whenever a steamer having a vessel or vessels in tow, bound down in the day time, enters the 'Dark Hole' a white flag over a red flag will be displayed on the pole until such towing steamer is abreast of said point.

"Whenever a steamer bound down said river at night Galley Nin—Record.

enters the 'Dark Hole,' a white light over a red light will be displayed on said pole, and whenever a steamer bound down at night, having a vessel or vessels in tow, enters the 'Dark Hole' a white light with two red lights under it will be displayed on the pole.

"No flags or lanterns, however, will be displayed for tugboats without tows or for small vessels.

"The rule requiring vessels to sound one long blast of the whistle at Rains Buoy and Everen's Point will remain in force."

OBITUARY.

Capt. Benjamin Hammond, aged 65 years, died Saturday morning, September 4, at 11 o'clock, of Bright's disease, at the home of his daughter, Mrs. Watson Marks, at 912 Rock Island street, Davenport, Iowa. He was born in New York and had been a resident of Davenport 16 years. The deceased was formerly, for many years a well known mariner on the lakes. In the fifties he was master of the schooners Freemont, Resolute, Levi Rawson, and Badger State, in 1866 he brought out the schooner E. C. Ninns, one of the finest schooners on the lakes at that time, and in 1867 the schooner J. R. Benkley. In 1869 he succeeded Capt. Cotton, who was one of the first vessel agents at Buffalo, and he afterwards went into the insurance business with Messrs. Worthington and Sill, at Buffalo. He left Buffalo about the year 1881, for Davenport, where he engaged in the grain business. He is survived by his widow, two daughters, Mrs. Watson Mark and Mrs. C. C. Clark, and one son, J. A. Hammond. The funeral took place from the residence, 912 Rock Island street, Monday morning, September 6, at 11 o'clock. The body was incinerated at the Davenport crematorium and the ashes were buried in Oakdale cemetery.

C. & B. LINES'S NEW STEAMER.

General Manager T. F. Newman, of the C. & B. line, says he will likely be in a position to make a statement regarding the much-discussed new boat in about a week. Mr. Newman has been figuring on the plans and talking with the Detroit Dry Dock Co., which will probably build the vessel. The C. & B. Co. could get along without a new steamer, but another boat like the City of Buffalo would be a desirable addition to its facilities. In a few days the public will know whether the boat is to be built or not.

DULUTH LUMBER SHIPMENTS.

The customs house records show that 124,197,000 feet of lumber had been shipped from Duluth up to September 1, which with the allowance referred to would make it 155,246,000 feet, as compared with 195,346,000 feet during the same period last season. In but two months have the shipments exceeded those of last season—April and June.

H. C. BURRELL,

Marine Reporter.

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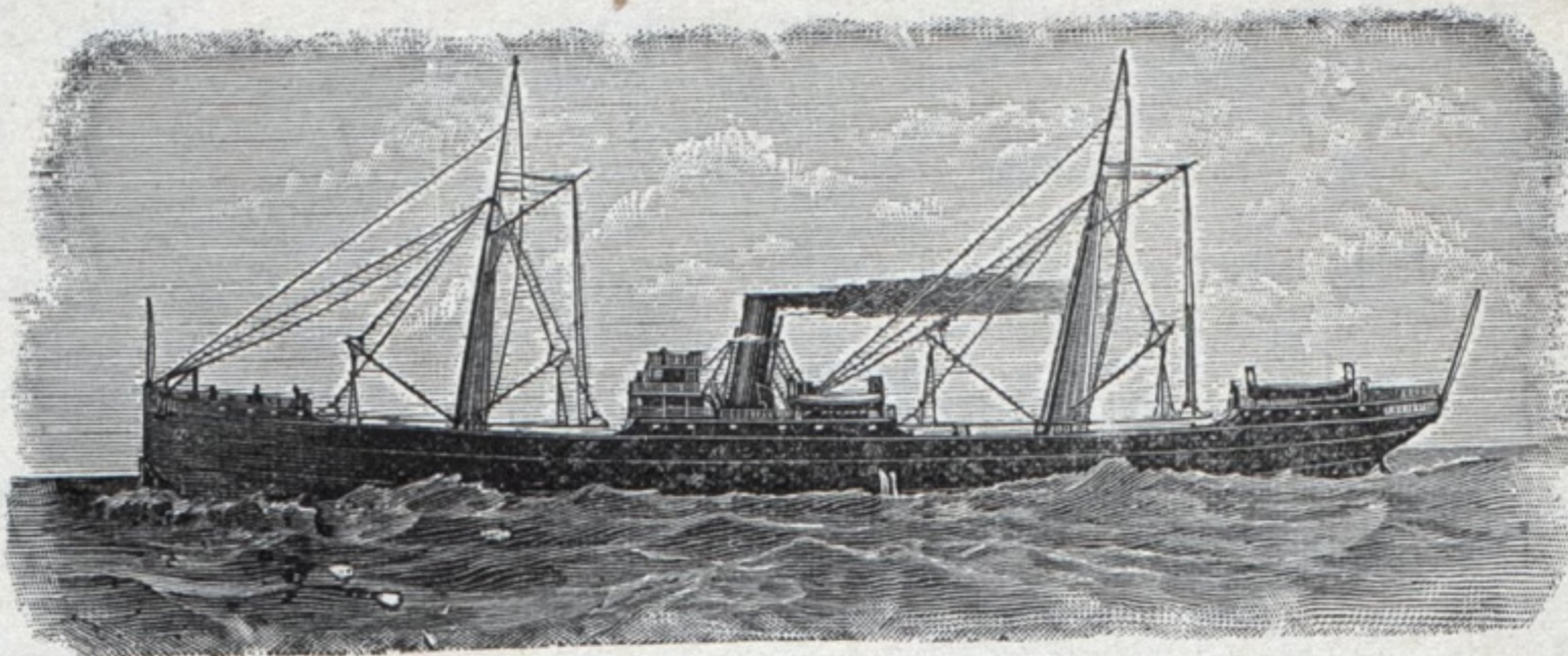
FOOT WOODWARD AVENUE,
DETROIT, MICH.Signal: One long
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you white and deal
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BUILDERS OF ALL KINDS OF

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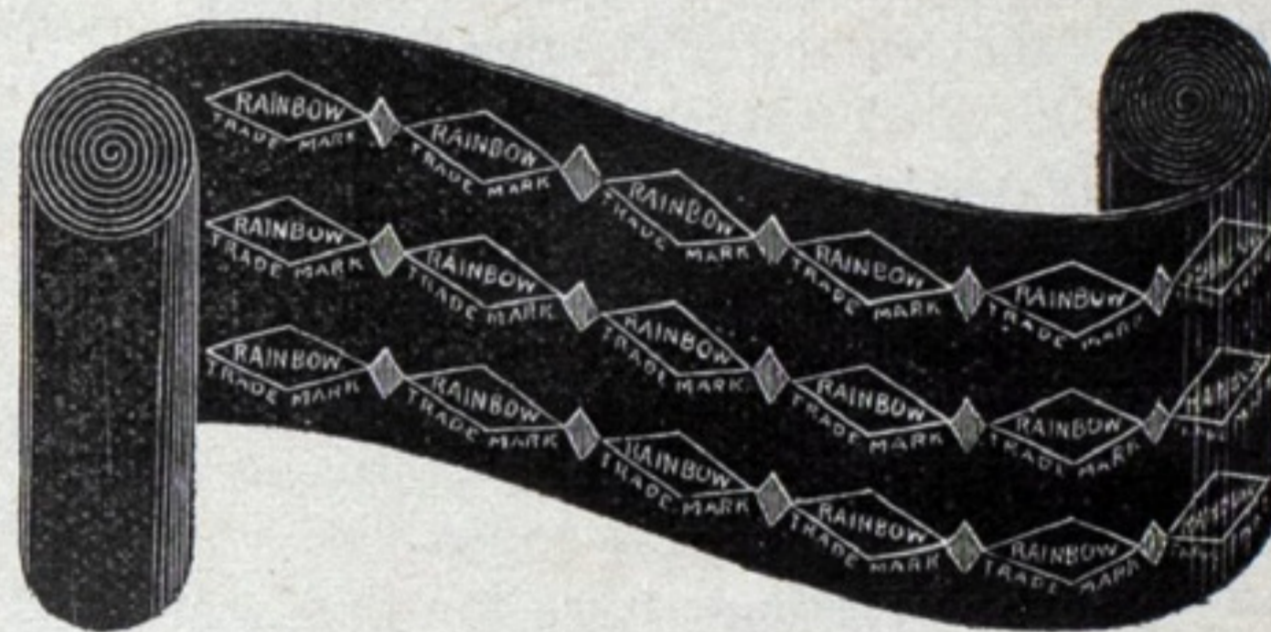


To have offered a guaranteed watch for \$1.50 a few years ago would have only caused a scoffing public, but the marvelous progress in mechanics together with our enormous output have made it possible, and we are now proud to introduce to the readers of this journal our "NEW AMERICAN." This is no cheap, trashy affair. The case is of solid, yellow metal, equal in appearance to gold, and will not change color. The movement is the regular American lever, has second hand, patented escapement, 240 beats per minute, and a guaranteed reliable time keeper. The most wonderful of modern productions in quality and price. Sent on receipt of \$1.50. Your money back if you are not perfectly satisfied. We refer by permission to THE MARINE RECORD

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GENERAL SUPERINTENDENT PEERLESS
RUBBER MANUFACTURING CO.**RAINBOW PACKING.**THERE IS NO OTHER "JUST AS GOOD."
WHY? Because no one else knows how to make it.

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No Equal.Will hold
Highest
Pressure.

THE COLOR OF RAINBOW PACKING IS RED.

Don't have to use Wire and Cloth to hold Rainbow.
Rainbow won't Blow Out.**OUR WESTERN CONNECTION.**

If late reports regarding certain railway combinations are to be credited, J. J. Hill, of the Great Northern Railway and Northern Steamship Co., is constantly strengthening his lake interests. Comment on the recent advance in securities of the Chicago & Great Western railroad is attended by the report that the J. P. Morgan interest, which is now in full control of the Northern Pacific, and the James J. Hill party, which owns the Great Northern Railway system, are now in possession of options representing controlling interests in the Great Western. This will perfect a formidable combination which will minimize the competition in the carrying trade of the northwest. The Chicago & Great Western will give the Northern Pacific-Great Northern interest its own line from St. Paul to Chicago. It is proposed by the new combination to make an attempt to control the trans-Pacific carrying trade by means of an alliance already perfected and in operation with the Nippon Yusen Kaisha, or Japan Mail Steamship Co., which has the largest fleet and the second largest tonnage rating of any steamship company in the world. In joining this alliance the Japanese steamship company brings to its partners a monopoly of the interior and coasting trade of Japan and China, and also places in service connecting lines of steamships to compete for the Indian, Australian, Hawaiian and northern Asiatic trade, with the object of diverting to the United States route the English and continental European traffic for India and Asia, which has heretofore gone via the Cape Town or Suez canal routes. The lake and rail business of the combination is to be thrown to the Northern Steamship Co., via Duluth. The latter company, as an ally of the Great Northern system, with the Eastern railway, of Minnesota, which extends from St. Paul to Duluth, has also passed under the control of the syndicate. East of the all-rail terminus at

Chicago and east of the lake and rail terminus at Buffalo the traffic of this big combination will it is said, be thrown to those roads in which the Morgan interests predominate.

THE BEST ROUTE.

Canada is unquestionably in earnest in the matter of the new steamship service, so says Transport of London, England. The government recognizes that Canadian products ought to be carried by Canadian railways and shipped by a Canadian steamship line. This much is to be gathered from the very interesting correspondence which has passed between Mr. J. Israel Tarte, the Canadian Minister for Public Works, and Sir William Van Horne, the president of the Canadian Pacific Railway. Mr. Tarte asked Sir William why it was that such large quantities of wheat found their way to European—that is to say English markets—over American lines, and what effort on the part of the government acting for the people of Canada would have the effect of keeping Canadian trade within Canadian channels.

The president of the Canadian Pacific, in his reply, said that the reason the traffic went by the New York route was a very simple one. It was because that route was the cheapest, taking the cost of carriage all the way from the Great Lakes to various trans-Atlantic ports. The advantage of the New York route was in the ocean rates, and this advantage in ocean rates was due to the use of very large vessels especially adapted to the carriage of freight at the lowest possible cost. Sir William proceeded to discuss the means necessary to hold the trade with certainty in Canadian channels. To do this, he said, it was absolutely necessary that the ocean ferryage should cost no more than by the New York route, and this meant the employment of similar or superior freight carriers

and the complete separation of the passenger and heavy he added, had been made by the Dominion Government in providing for a fast Atlantic service. This should result in making the carriage of freight a specialty, and in the introduction of freight steamships of the largest and most economical type; and when these came the carriage of Canadian freight and much of that of the western states would be secured to Canadian channels. Mr. Tarte, in reply, introduced the question of elevators and cattle yards. He expressed the opinion that Canada's disadvantage centered in the lack of storage and transshipment facilities at the seaports. He divided the transportation problem into two parts: The carriage from the Great Lakes to the Canadian seaports, and the transportation from the seaports on the Canadian side of the ocean to the seaports on the other side of the water. The Minister then proceeds to deal with the former division, and he arrives at the conclusion that elevators and cattle yards are necessities if Montreal is to become the Buffalo or New York to Canada.

The Jackson-Harmsworth Polar expedition returned to London, Eng., on the steamer Windward on the third. The result of the exploration of Franz Josef land is that many important changes will be made on the map.

The latest addition to the big western ocean liners is the Rotterdam, of the Holland-American line. Her length is 480 feet, beam 53 feet, depth 42 feet, and registered tonnage 8,200 tons. The vessel has staterooms for 200 first-class passengers and 150 second saloon, and accommodations for 844 persons in the steerage. Her engines have 5,000 horse-power, and are of the triple expansion type. She was built by Harland & Wolff, of Belfast.

LITERARY NOTES.

"Naval Gunnery," by Capt. H. Garbett, R. N., is published this week by the Macmillan Co., 66 Fifth avenue, New York, price \$1.50. The work is edited by Com. C. N. Robertson, R. N., and is one of a series of Royal Naval hand books published originally by George Bell & Sons, London. The author gives a description and history of the fighting equipment of a man-of-war and the volume should be in the hands of every naval officer who desires to progress in his profession. The work is well illustrated and contains in all 360 pages, size 7½ by 5 inches in cloth cover.

"The Commercial Year Book," published by the Journal of Commerce, and Commercial Bulletin of New York, is a thoroughly statistical and valuable volume for commercial interests to keep closely at hand. The author of the work says in his preface that it is impossible to claim absolute originality for any large portion of a work of the character thus presented. The compiler has had to depend upon selection from a wide diversity of sources, abroad as well as at home; and his product would be but a scanty contribution to the immensely diversified wants of his readers had he failed to avail himself of the labors of statistical authorities the world over. This appropriation of the work of collaborators, however, carries a debt of recognition; and the editor extends his cordial thanks to those who unwittingly have become contributors to the contents of this volume. He is much indebted to the liberality with which valuable information has been contributed by heads of departments of the federal government, including Hon. Eugene T. Chamberlain, Commissioner of Navigation; Hon. James H. Eckels, Comptroller of the Currency; Mr. Worthington C. Ford, Chief of the Bureau of Statistics, and Mr. Henry A. Robinson, Statistician of the Department of Agriculture; not to specify minor favors from other department officials. Not less valuable have been the contributions of Mr. S. N. D. North, Secretary of the National Association of Wool Manufacturers, and Mr. J. M. Swank, General Man-

ager of the American Iron and Steel Association, and the statisticians of the Produce Exchange, the Metal Exchange, and the Coffee Exchange of New York. Thanks are not less due to the heads of the statistical departments of the governments of France, Belgium, Austria-Hungary, Russia, and Italy, as well as to the compilers of the British Board of Trade reports. Especially we recognize our obligations to the mass of valuable information contained in the London "Statesman's Year Book," now compiled with admirable care and thoroughness by Mr. J. Scott Keltie. The London Economist has also proved a source of information upon many matters in which exactness is of special importance. The scope of the volume may be judged from the foregoing in a more complete manner than perhaps anything we could say in variation thereof. Price in cloth \$1.50. Edited by Walter A. Dods-worth, Ph. B., and published at 17-19 Beaver street, New York.

The St. Ignace Enterprise has got out this week a very valuable edition under a colored cover. Editor Jones has done himself proud this time and the advertising program is just excellent in his weekly sheet. St. Ignace will surely advance with such an exponent of its doings.

The June Mercantile Marine Service Association Reporter of Liverpool is a most valuable number and there are many articles of signal significance within its covers. More Americans ought to receive this journal.

EASTERN FREIGHT REPORT.

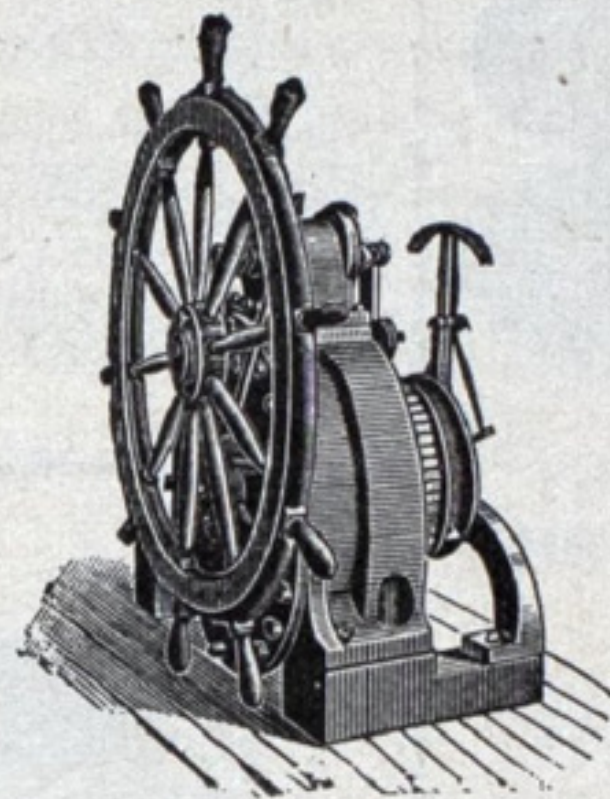
According to the regular freight report sent to the Record by Messrs. Funch, Edye & Co., New York, we learn that the continued rise in wheat has acted prejudicially to our freight market, especially since a sympathetic advance has been engineered in maize, to the prejudice of berth freights. Whilst some trades have been made for medium-sized tonnage to Cork f. o. b. at 3s 7½d for October and later months' loading, owners' figure of 3s 9d is not yet obtainable, and it is generally understood that these charters cover sales effected some time back.

Large boats are in limited demand from the Atlantic ports, spot tonnage not being able to secure beyond 2s 6d@2s 7½d, whilst October boats are worth 3s, and for later months some business has been done at 3s@3s 1½d. Berth freights have advanced a trifle, but the demand seems to lack steadiness, and limits do not follow the advance in our markets. Deal and timber freights manifest an advancing tendency, but the good demand for cotton boats interferes with fixtures. Cotton freights show great strength, especially from the South Atlantic ports, which appear more inclined to fall in with owners' enhanced views. Freights for case oil to the far East are steady, and fairly prompt boats, offered on terms of last fixtures, are reasonably certain to find acceptance.

There is no change whatever in the condition of our market for sail tonnage, and we have nothing of interest to report regarding it.

It is estimated that the Chicago banks are paying out \$1,000,000 per day to farmers for freight on the grain crops.

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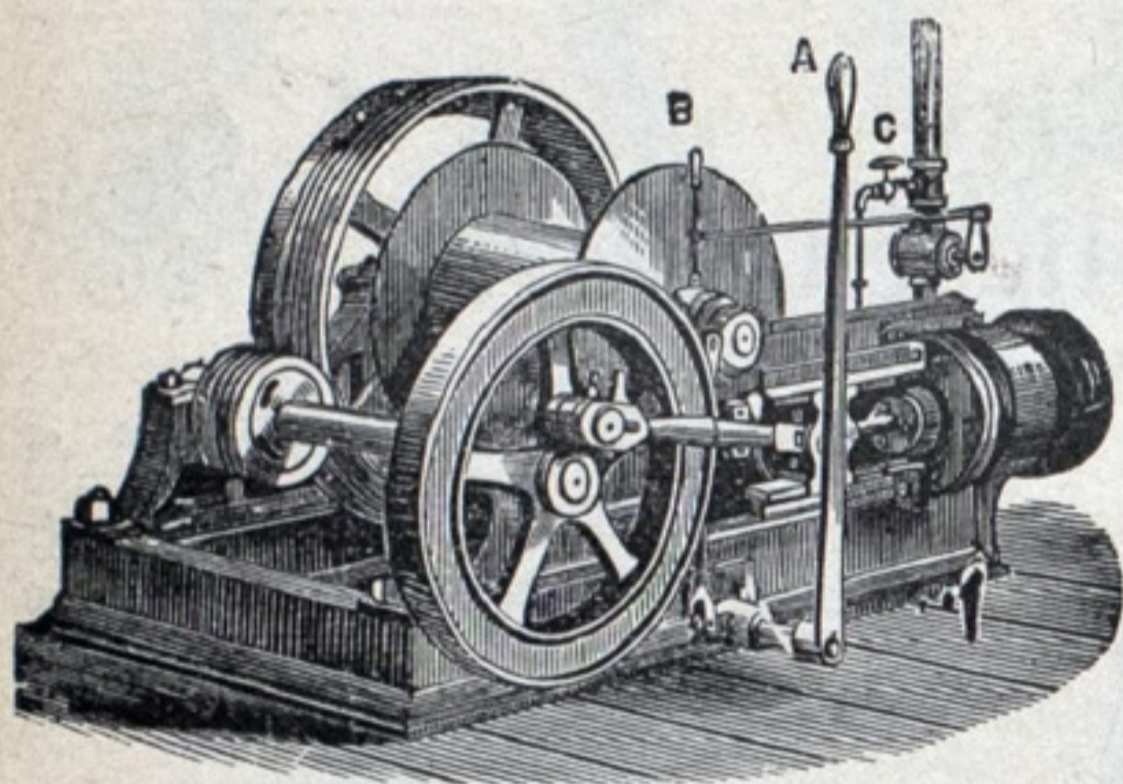


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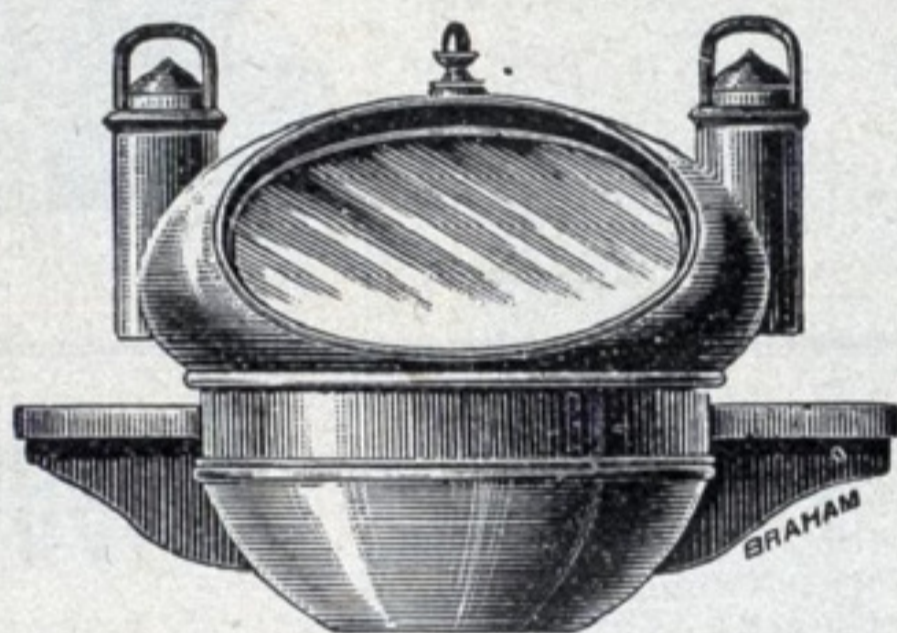
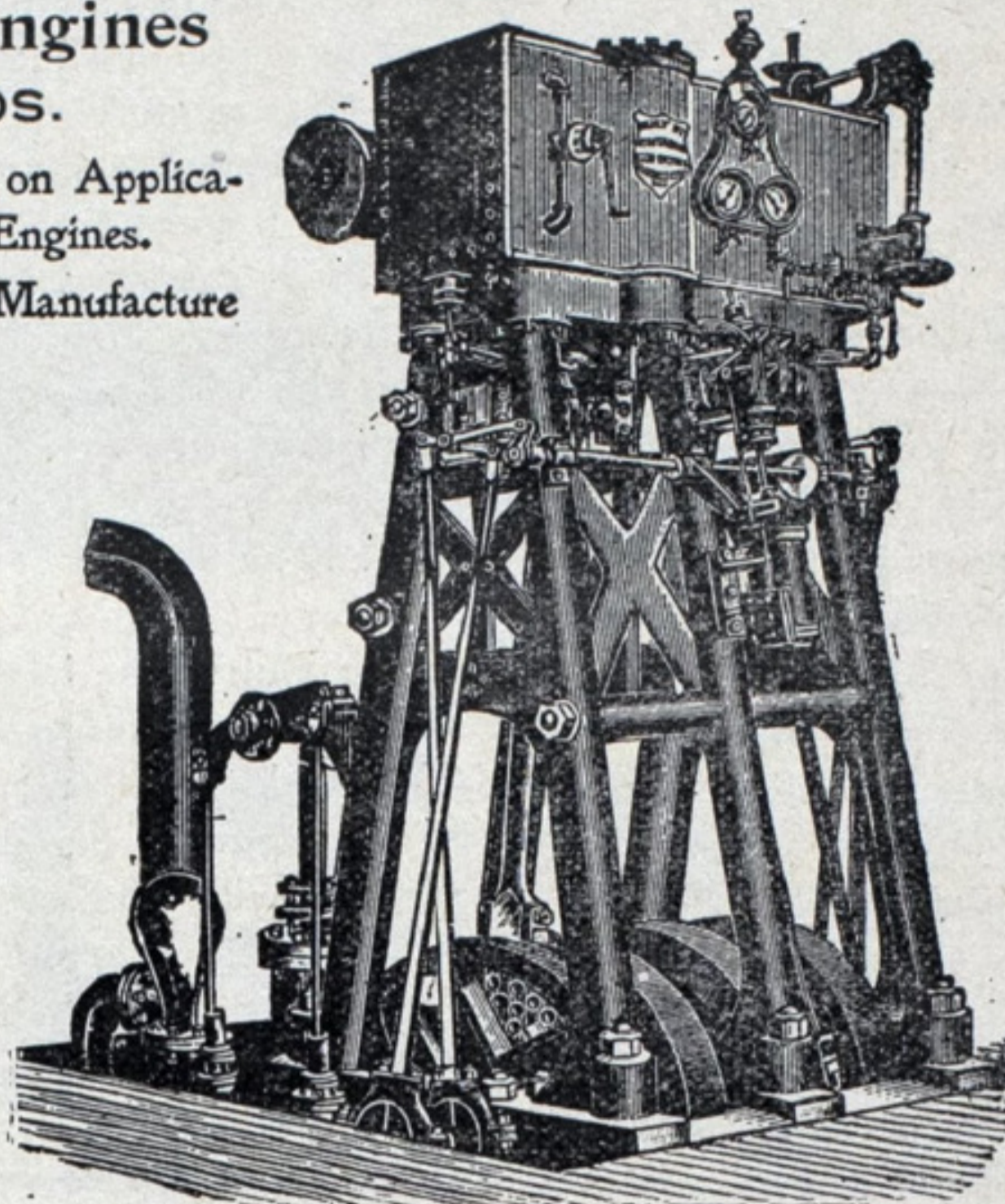
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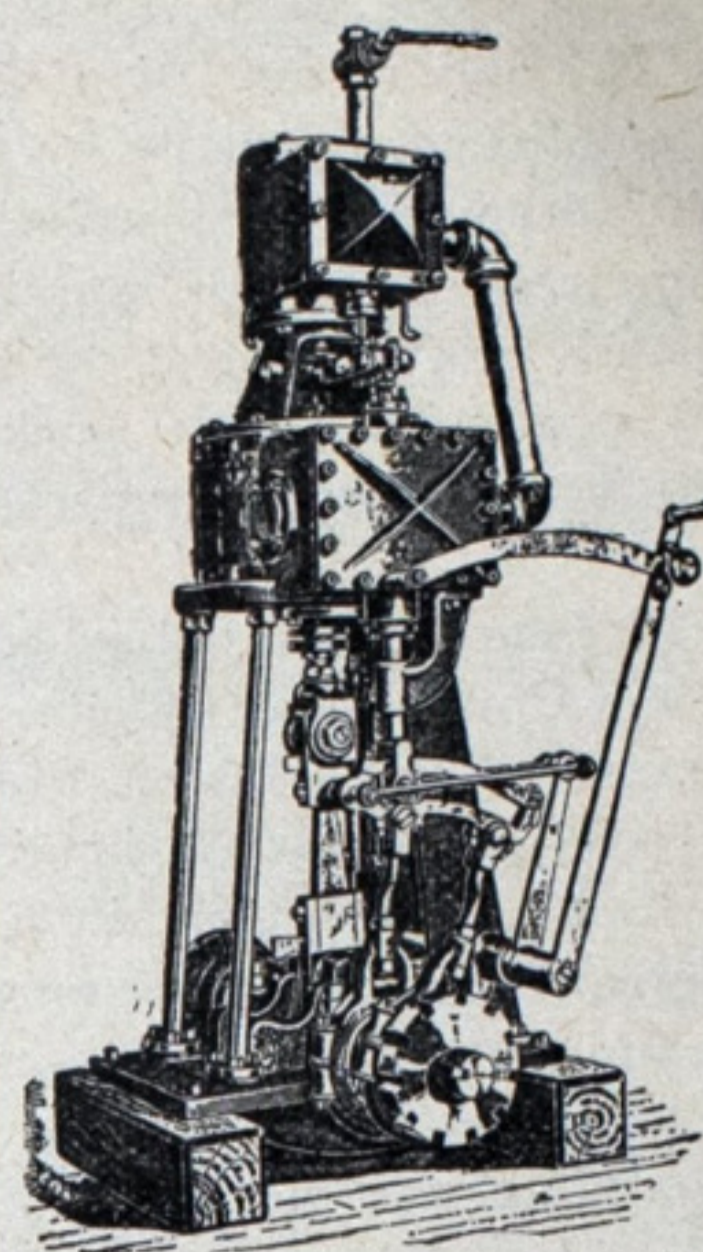
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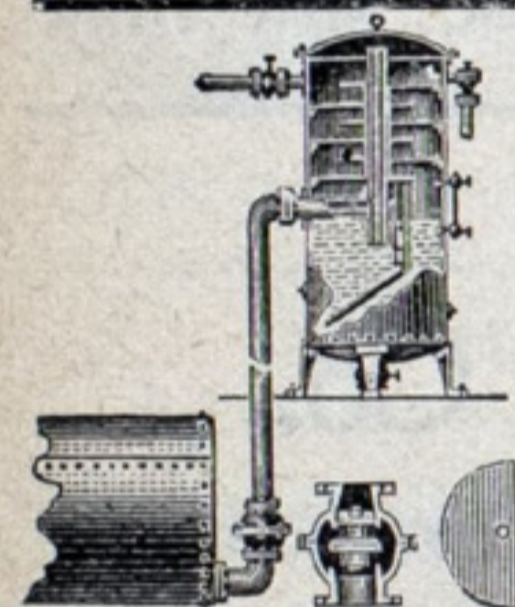
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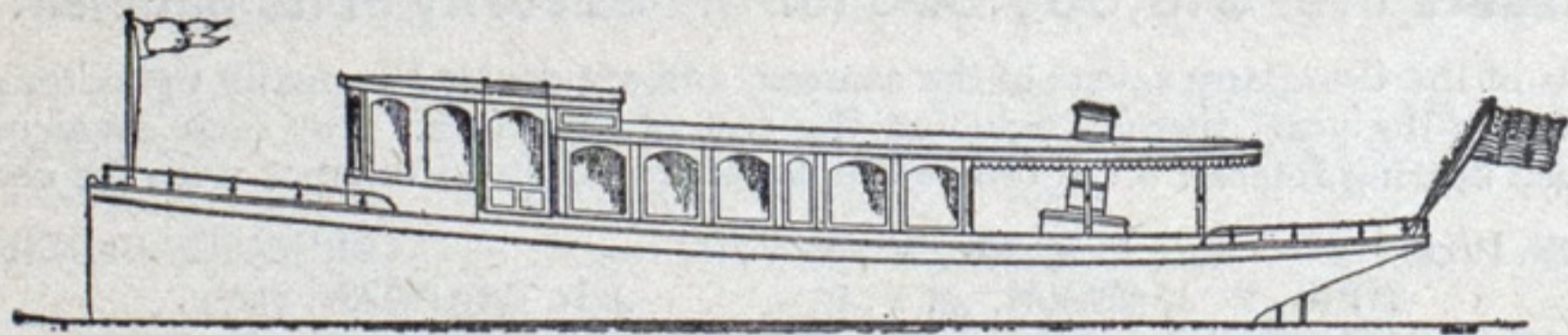
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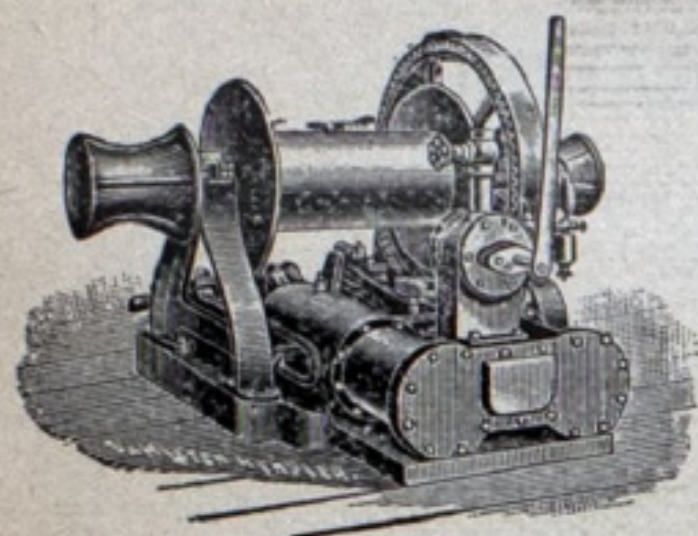
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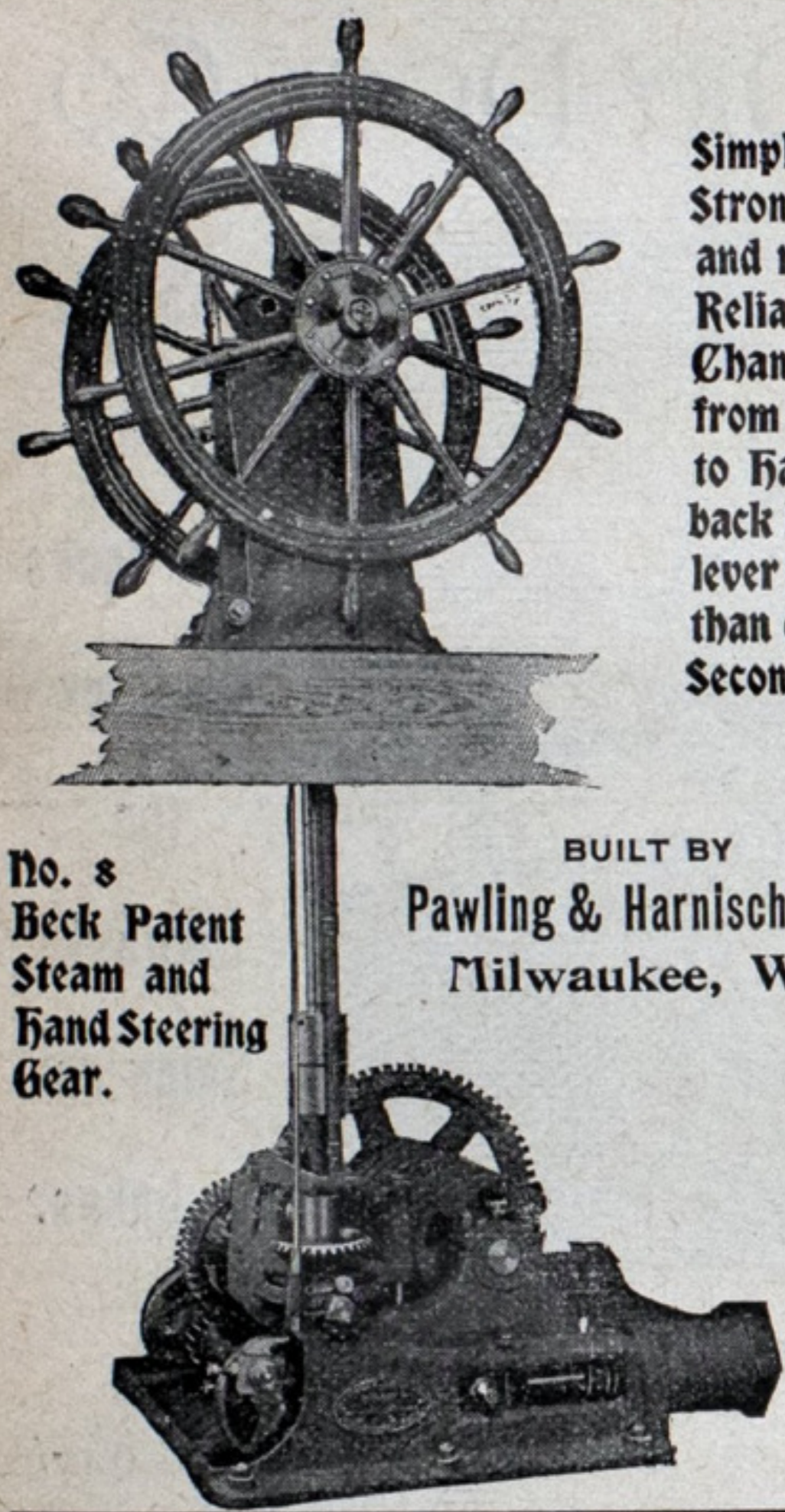
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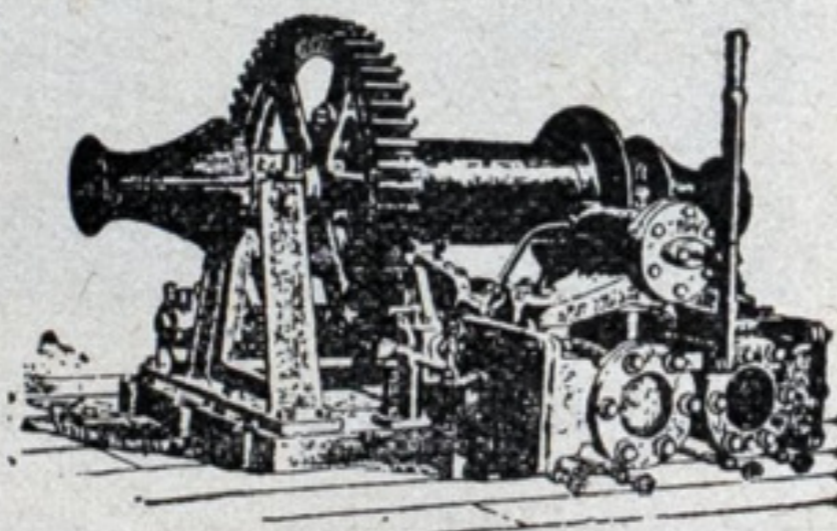
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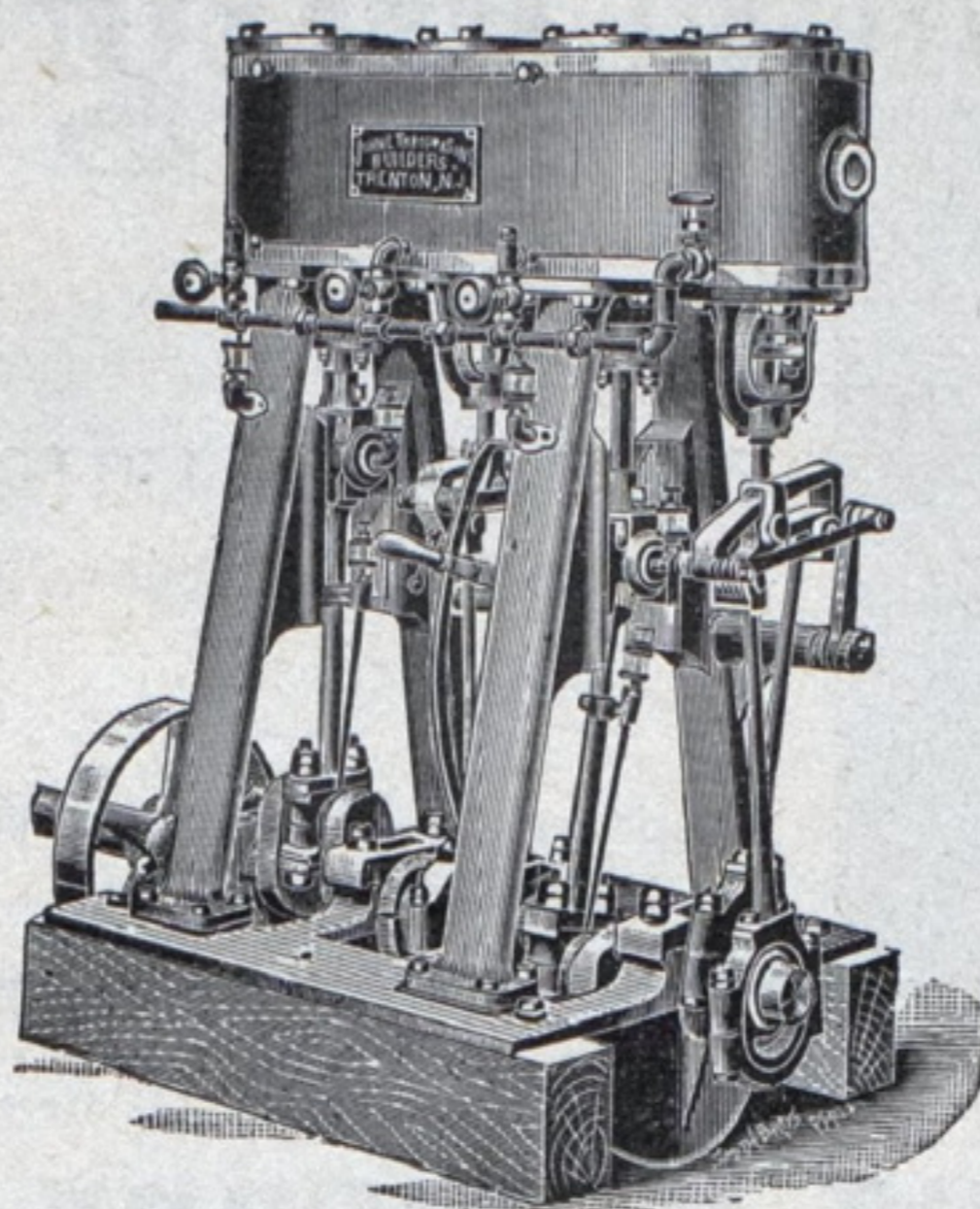
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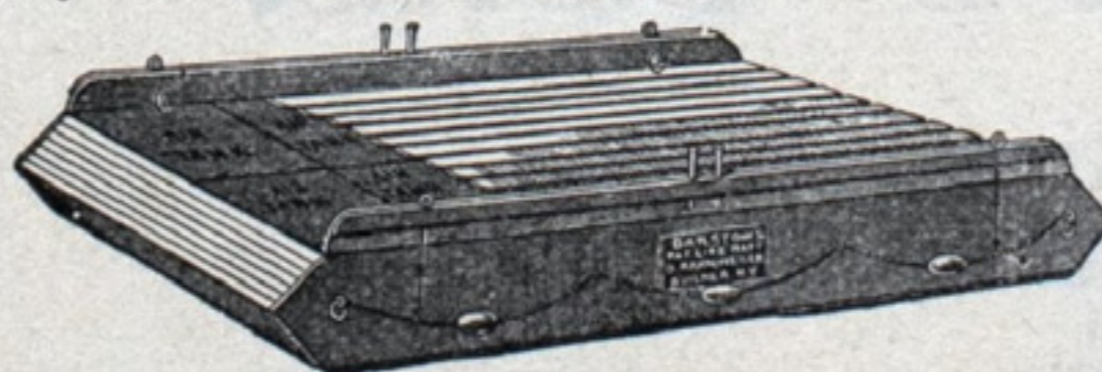
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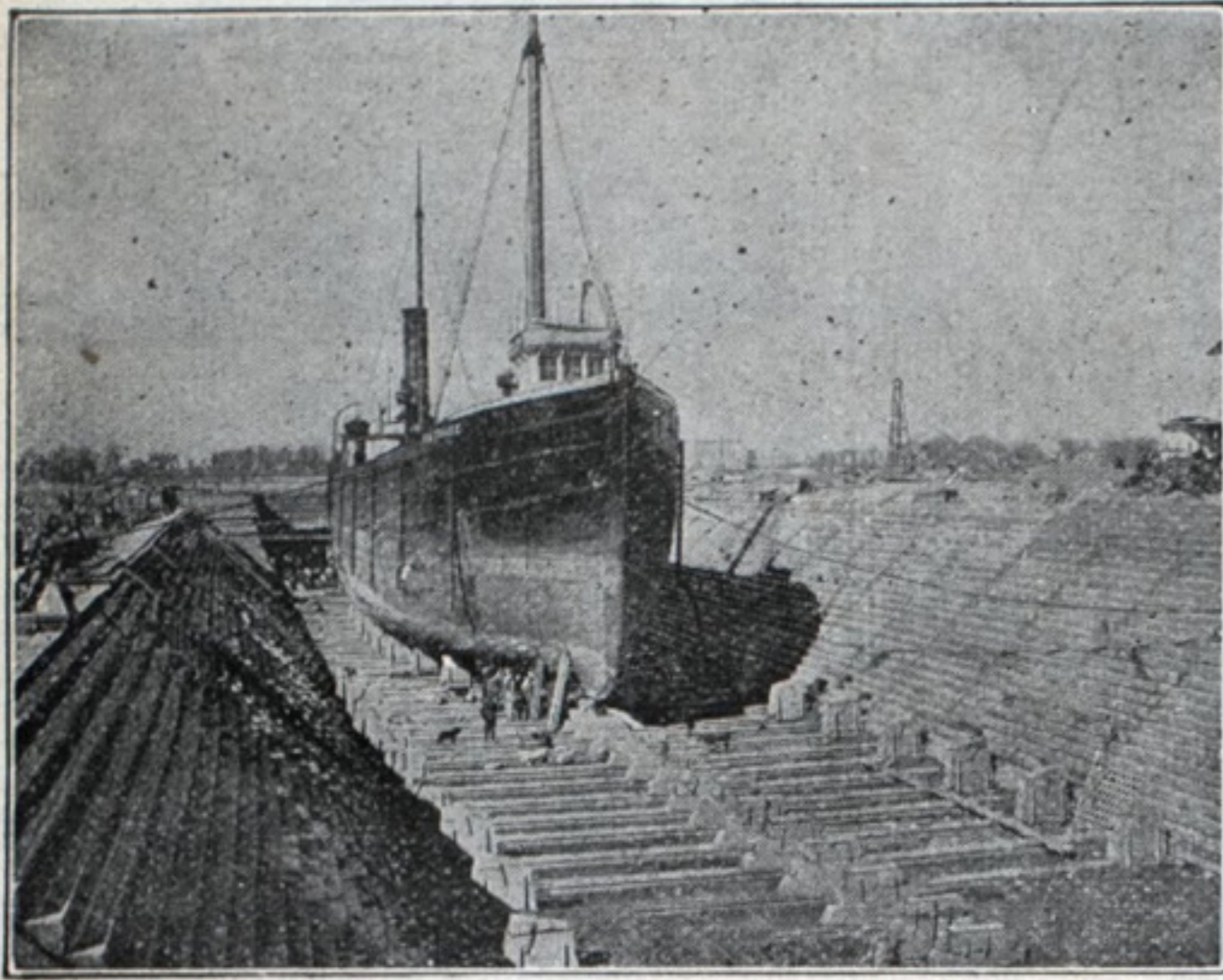
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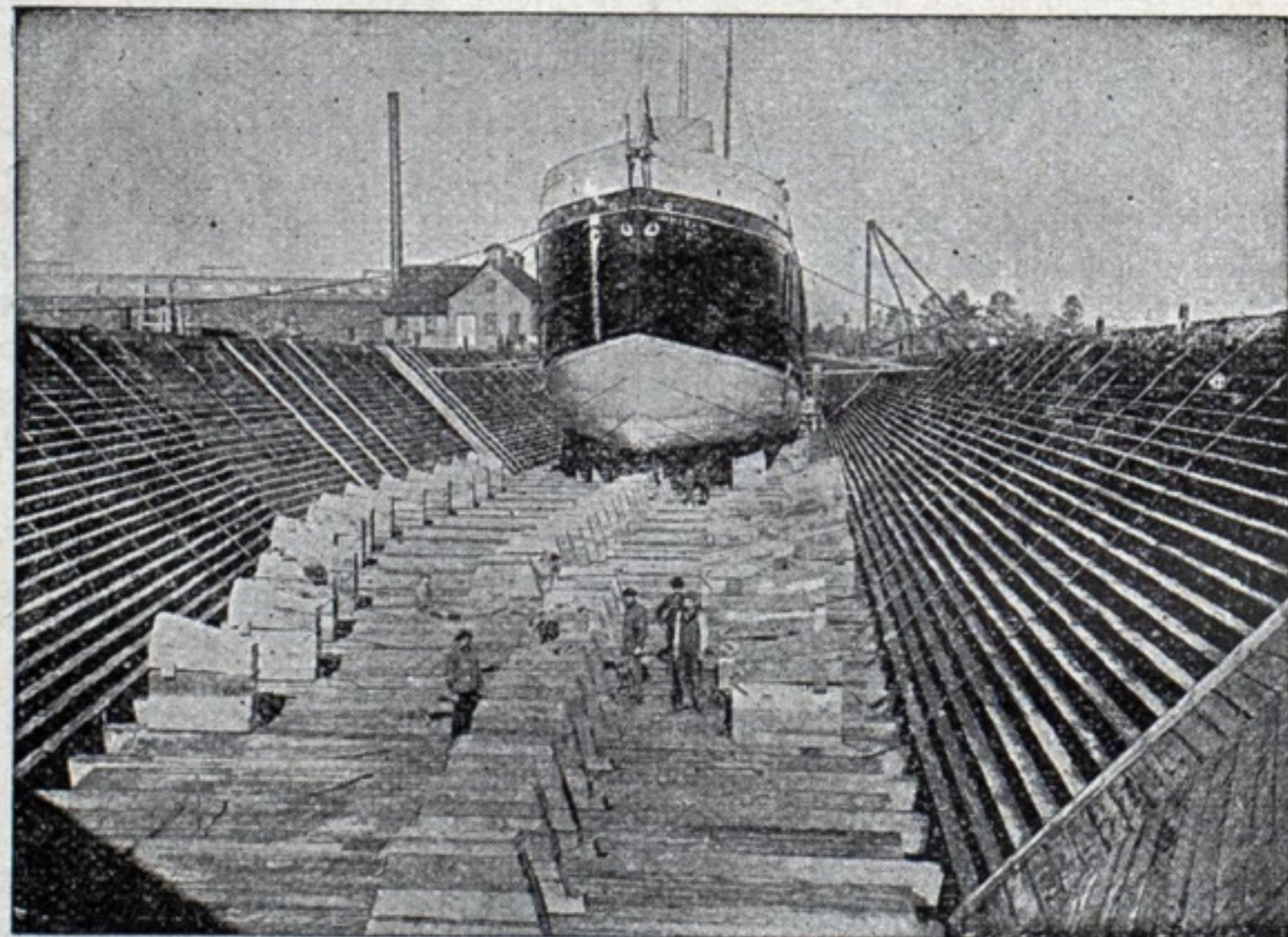
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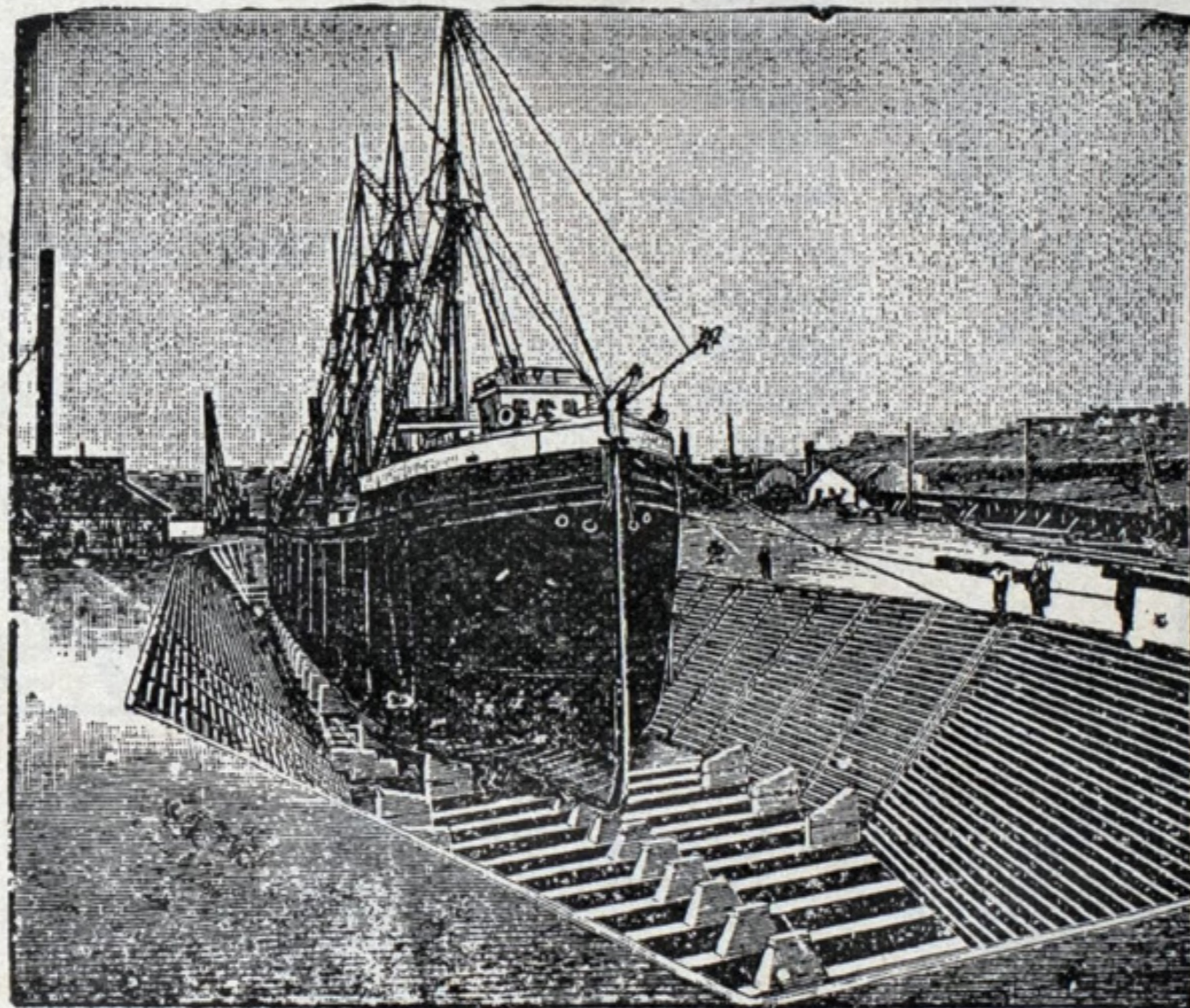
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Office Telephone, 767.
Residence John Mitchell, 'Phone 3506. 508-509-510 Perry-Payne Bldg. Cleveland, O.

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CLEVELAND, O.